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THE BUILDER

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The Genius of Inigo Jones.

THERE is a strange contrast between the conviction we feel as to the genius of Inigo Jones and the comparatively small basis of accomplished work which can be cited to justify this conviction. There is a certain analogy in this respect between his position and that of Leonardo da Vinci. No one can doubt that da Vinci was one of the greatest artistic intellects of the Italian Renaissance; yet his fame practically rests on only one work of the highest importance, now unhappily nearly faded away; on a few smaller paintings some of which are of doubtful authenticity; and a number of miscellaneous sketches and studies, full of a marked and almost defiant originality, though of the most mixed and fragmentary character. Inigo Jones has also his one great work, but with the unfortunate difference that it exists only as a scheme on paper and not as an executed work. What the "Last Supper" is to da Vinci's fame, however, the design for the Whitehall Palace is to Inigo Jones's; it is the one architectural conception on a great scale which can be positively affirmed to be his; and with the exception of the one corner of it which has taken shape and substance in masonry, it has to be judged entirely by a set of rough and inadequate drawings. Yet these alone are enough to prove that Jones was one of the world's great architects, one of those who had the power to conceive and plan a great building which should be a stately and impressive whole, embodying a grand idea; not a mere picturesque collocation of parts with no necessary relation to each other. And considering how much we have heard lately in contempt of architectural drawing and designing, and that an architect is a man who builds and not one who makes drawings, and so on, it is rather significant that the fame of our greatest architect—for such Inigo Jones potentially must be held to be—rests more than anything else on a design of which only a small fragment ever got beyond the stage of drawings.

As far as the drawings go, it is mainly in the plan that Inigo Jones's genius is manifest, partly because the drawings of the elevations, like other drawings by him (or attributed to him) and by other architects of the period, give but an inadequate idea of the manner in which the detail would have been carried out, and partly because the greatness of the whole conception resides more in the plan than in what is sometimes mistakenly called the "architectural treatment," as if that were something separate from plan. Inigo Jones had strongly imbibed the lessons of the Classic school of architecture, and regarded a large building as a thing to be grouped in symmetrically designed masses arising out of the main divisions of the plan, not as an opportunity for seeking adventitious effect by the aid of unexpected and picturesque features unconnected with the main design of the plan. Consequently, there is nothing startlingly original in the suggested detail; it exhibits the usual materials of Classic architecture of the Renaissance—rustication, orders, architraves and cornices to the windows, &c. For the architectural effect we should have had to look, had it been completed, to the masses, to the balance and symmetry and to the great scale of the whole, not to anything especially original in the design of the details; though the Banqueting House suffices to show with what refinement and scholarly feeling these would have been worked out. Still, architectural invention is not specially displayed here. The invention is in Jones's magnificent plan, the finest plan for a royal palace, perhaps, ever made; at all events the finest of which we have any record. The two most striking points in it, besides the immense scale of the central court (which must have been impressive, one may almost say, whatever were the details), are first, the fine contrast between the square state court on the one side of the great quadrangle and the circular court on the other side; the two occupying a symmetrical position on the axis of the plan, so as not to disturb the stately effect of the quadrangle, yet offering such a piquant contrast in architectural line and effect; and secondly, the mere idea of using a great circular gallery as the State approach to the Royal apartments. It is possible that many who know the plan in a general way have not fully realised this feature, and the effect which it would have had in execution. No such approach to the presence of Royalty has ever been devised in any palace of which the plan is preserved. The entry is first into a large square hall with four columns in the centre, dividing the area into nine squares, as it were;

then up one or other of the great staircases on either side, landing in a similar hall on the first floor; thence access would be had to the great circular gallery, round the whole semi-circle of which the visitor must proceed to the opposite portal, whence he would have emerged into a long and wide gallery which formed the ante-room to the two "Royal closets," rooms of oval shape, susceptible of very fine decorative treatment, entered through doors near each end of the gallery. Architecturally these private rooms of the Sovereign are decisively emphasised in the exterior design, the blocks in which they were situated forming decorative projections from the front, crowned with cupolas. To have kept up a suite of royal galleries and approaches on such a scale would have been as much beyond the purse of an English sovereign of the period as would have been the erection of the palace to begin with; and if Charles I. had got together the money to build the palace, he would never have been able to occupy it with a state and splendour in keeping with the spaciousness and dignity of the plan. But one can imagine, under such a monarchy as that of Louis XIV., for instance, what a scope such a plan as this would have afforded for the display of a sumptuous retinue, what opportunities for processions and other attributes of state in royal receptions. It was truly a great conception. Versailles is but a piece of commonplace compared with what Inigo Jones's palace would have been.

The British Museum print-room contains a portfolio of plans and elevations of the palace, mostly on tracings mounted, some of which are claimed as being Inigo Jones's own drawings. Mr. Blomfield doubts whether there are any drawings of the palace which can with certainty be said to be from the hand of Jones himself; he takes the Worcester College drawings for illustration of the design. It is quite certain, however, that some of the British Museum drawings are more like originals than others; at least there are obvious copies which reflect a kind of *per contra* authenticity on the others. In those which are classified as genuine at the Museum, there is a freedom in the sketching in of the sculpture which is in their favour; and there is one decorative detail, that of scrolls or consoles with a head placed on the scroll, which occurs in two or three places, and is so much of the nature of an Italian Renaissance fancy as to give the impression of coming from a draughtsman who had studied Italian work at first hand. There is a considerable use of decorative sculpture in the shape of nude figures lightly sketched in to fill up spandrels, in a manner which looks more like original work than like a copy. Along with these is an elevation for the north front of the Palace, with this inscription at the foot:—

"The incomparable architect Inigo Jones having in the year 1639 presented those his Designs for the Building of White Hall to King Charles y^e^ First: which through y^e^ Iniquity of y^e^ Times could not be put in Execution. It has unfortunately happened y^t^ (as one Evil is often the Cause of more) that y^e^ North Front of this Design having been lost —— I have to y^e^ best of my Judgment Erected this Front, from y^e^ Original Plan of Mr. Jones, in his stile, to make y^e^ Designs Compleat. W^m^. Emmett of Bromley in y^e^ County of Kent: An^o^ 1717."

The worthy Mr. Emmett has, however, hardly given probability to his design by adopting, in the recessed portion of the elevation, a long row of round-arched windows in the upper story, similar to those introduced in the centre of the pavilions in the elevations which claim to be original. Considering the general symmetry which prevails throughout the design as shown in the latter, it is not likely that Jones would have materially varied the north front by introducing as a repeating feature a form of window which in the other elevations is only used as accentuating the design in the pavilions. There are other elevations in the British Museum portfolio much neater in execution than the so-called originals, though at the same time tamer and more timid, and which are obviously a draughtsman's copies. In these drawings the form and finish of the cupolas differs from that given in the Worcester College drawings and followed by Kent, and is on the whole superior to the latter. If we are to suppose that there are any drawings of the Whitehall elevations by Jones's own hand extant, we should be disposed to think that there is considerable internal evidence in favour of those claimed as original in the British Museum set. They have not the finish and care, nor the timidity, of a draughtsman's copies; there is a freedom about them which suggests the hand of the original designer. In the same portfolio is a set of elevations of a long façade of a classical building of somewhat the same proportions as the Whitehall Palace; a design with a large Corinthian order and two stories of windows between; the whole of a very *rococo* character and profusely ornamented with scrolls and masses of carved festoons, &c. It is evident that these had at one time been regarded by some one as elevations for an alternative design of the Palace, as there is a half-obliterated pencil memorandum on one of them referring to this belief and stating that they are not such, but something else which is illegible. Whoever these are by, there is a great deal of force and vigour about them of an exuberant character, but they are unlike the generally reticent and reserved quality of Jones's designs for buildings, and the terminal figures on the balustrade are clumsily sketched in, and these and the terminal vases are out of scale with the whole. On the other hand, they have some of the character of Jones's sketches for Masque architecture, in which he is a great deal more exuberant and *rococo* than in any of his known designs for permanent architecture. They are of some interest at all events, whether original or not. The British Museum also possesses some free and bold pen studies of figures and heads attributed to Inigo Jones, of which the principal example is much more in the style of Rubens than in that of the Italian masters with whom Inigo Jones should have been more familiar. An interesting sketch is one for some piece of architectural sculpture introduced in panels with plain piers between them; the sculpture is roughly but forcibly sketched in, a figure in each panel, and again with the rounded contours belonging rather to Flemish than Italian art. If these figure studies are genuine, they show that however Inigo Jones had been imbued with the Italian Renaissance taste in regard to architectural detail, his ideas of figure drawing were of a ruder and less refined school.

Apart from his great design for Whitehall Palace, which in its general lines and its magnificent plan is at least authentic (though even here we are left in doubt as to the authenticity of the actual drawings), the work of Inigo Jones in English architecture is represented to us in the present day, in great measure, by scattered fragments of designs; portions of buildings which are probably his but of which much of the original work has disappeared or been altered; a front here, a gateway there, a staircase or a room happily preserved, show the traces of his powerful hand. The impression we get of him is somewhat like that of the last appearance of the wizard in the "Lay of the Last Minstrel":—

> "Some saw an arm, and some a hand,
> And some the waving of a gown."

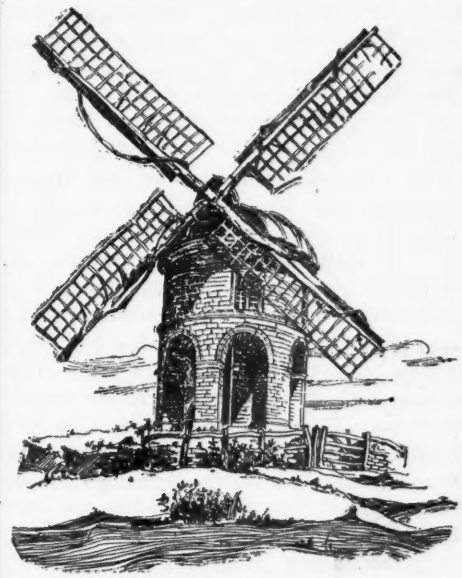
We have to piece things together to arrive at a conception of his powers. Hence Mr. Inigo Triggs and Mr. H. Tanner have done an admirable and most useful piece of work in collecting together in one volume illustrations of various designs by him which may be considered to be authentic.* Kent, no doubt, has put on record quite a long series of plans and elevations of houses attributed by him to Inigo Jones; but how much of this collection is Kent and how much is Inigo Jones it is not very easy to conclude; a good many of them at all events were probably merely worked up by Kent from rough sketches which had come into his possession. Some of the plans, though unpractical from the point of view of the present day, are fine as suggestions in architectural arrangement; but the elevations for the most part give no impression of that peculiar power and freedom in the handling of the *matériel* of Classic architecture, by which Inigo Jones put his own stamp on everything he carried out. As Mr. Blomfield observes in the chapter on Inigo Jones in his "History of Renaissance Architecture in England," it is probable that a building carried out under the great architect's superintendence took a different character and gave a different impression from anything which even his own drawings would convey. Mr. Triggs and Mr. Tanner have inverted the process; instead of drawings of what Inigo Jones might have carried out and put his own impress on, we have carefully prepared drawings of what he actually or probably did carry out; we proceed not from the drawing to the building, but from the building to the drawing.

The remarkable thing about Inigo Jones's genius is the power which he seemed to possess of putting his own life and vigour and originality into the use of architectural features which in one sense can hardly be called original, seeing that there was Classic precedent for their use, but which became stamped with originality from his bold manner of using them. Unlike Wren, who started as an admirable constructor and an original thinker in the way of plan, and became an artist as it were by degrees and by dint of practice and development, Inigo Jones was a born artist. In architecture he may be compared to Michelangelo in sculpture: on everything he touched he seemed to leave the impress of his powerful hand;

* Some architectural works of Inigo Jones: a series of measured drawings and other illustrations; together with descriptive notes, a biographical sketch, and a list of his authentic works. By H. Inigo Triggs and Henry Tanner, Junr.: Associates of the Royal Institute of British Architects. London: B T. Batsford; 1901

he could do nothing in a weak or commonplace manner. One of the most remarkable instances of this, perhaps, is that which is so familiar to us in Covent Garden church; for though it is difficult to say how much of the original construction, which has twice passed through the fire, is now left,* there can be no doubt that we have the design in its original form; it tells its own story as far as that goes; nowhere else can we find such an impression of power produced by such simple means; it is difficult to analyse in what it is that the effect consists, but the impression is unmistakable. In the treatment of design of a less severe character, again, one cannot but be struck with the remarkable shaping and modelling power possessed by Inigo Jones. The conventional resources of architectural ornament, such as scrolls and festoons, seem to gain a kind of new life under his hand; he seems to have modelled a building as a sculptor models a figure; and in this respect he certainly shows a notable example of that influence of individuality in the architect which some modern critics would persuade us is the bane of the art. Of this power a very good instance is the comparatively simple design of Raynham Hall, a building which we quite agree in regarding as bearing the stamp of authenticity as one of Inigo Jones's designs. There is no detail in this which can be said to represent a new idea for the period, yet there is a marked originality about it as a whole. Regarding this as one of the most interesting of the buildings which are Inigo Jones's design, we have given reduced reproductions of the two detail elevations, both as illustrations to this article and as examples of the class of illustration to be found in the book before us. In the use of that fine source of architectural expression, rustication, which Ruskin so unnecessarily scoffed at, Inigo Jones again shows always a remarkable power; he never uses it in a commonplace manner; a rusticated gate-pier becomes in his hands a work of architectural expression.

Among the works illustrated in the larger plates in the book, the authors have given measured drawings, both general and detail elevations, of the Banqueting House; of Castle Ashby; details from West Woodhay and Kirby; elevations, detail elevation, and elaborate interior details from Wilton House, including also an elevation of the stable buildings; a perspective drawing of Ashburnham House staircase; elevations and details of Coleshill House and Forde Abbey, with photographs of two of the ceilings from the latter; and an elevation and plan of what is perhaps one of the most interesting things in the book, the small garden-house at Beckett Park, a simple but boldly-treated building which proclaims the hand of the master as unmistakably as the front of St. Paul's, Covent Garden. They give also reproductions of the elevations of the Whitehall Palace, which, though never carried out, could hardly be omitted in any book of illustrations of Inigo Jones's work; it is besides necessary to explain properly the design of the Banqueting House; but the plan should also have been given to the same scale, not only to explain the elevations, but because, as already remarked, it is in the plan that the real greatness of the design consists.* The biographical and critical notice is also illustrated by numerous sketches and photographs of great interest. We reproduce, to a reduced size, two of the smaller ones, a shield from Kirby Hall, and the windmill at Chesterton; this is only "traditionally assigned to Inigo Jones," and we should rather question its authenticity; but whoever was the designer, it is an interesting example of an attempt to give architectural effect to a windmill.



Windmill at Chesterton.

The literary portion of the book is well written, without any attempt at more than giving a summary of the facts of the architect's life, and a brief description of the principal buildings illustrated. The execution of all the drawings is very good, and the make-up of the book does every credit to its well-known publisher.

To Inigo Jones's contemporaries a great part of his popular fame evidently rested on his fertile invention in designing built-up scenery for the elaborate masques which were a favourite form of entertainment of the time; a class of design no doubt most fascinating to a man of architectural genius, allowing him to give full scope to his inventive faculties without being hampered by any practical or economic restrictions. Could we have drawings of all the designs of this kind made by Inigo Jones, we should have probably a new impression of his genius, and a better understanding of the light in which he was regarded by his contemporaries. It would seem that while in the design of actual buildings Inigo Jones leaned towards a classic severity of style, in his masque designs he, not unnaturally, allowed a much more free licence to his fancy. Mr. Blomfield has published one very clever and interesting illustration, apparently from a rather highly finished drawing of somewhat fantastic design. The Institute of Architects' library possesses a few sketches of this kind, one of which, too slight and rough to reproduce from, shows a very fine conception; we seem to see one side of the scene in perspective, with a row of massive projections one after the other, treated some of them with cornices and columns or pilasters, one apparently as a circular tower with a cupola; one can easily imagine that a very fine built-up scene could be made out of this.

* So also with the front of the Banqueting House, of which it is not generally known that scarcely any of the original facing masonry is left; it has been pieced at different times owing to the decay of the stone, but the work of repair must have been very conscientiously done.

* A small scale illustration of the plan is given in the ext of the work.

While welcoming the publication of the book of illustrations of Inigo Jones's work

A Shield from Kirby Hall.

which has been partly the occasion of these remarks, and which is one that every architectural library should possess, we may add that we hope those who possess or consult it, younger architects especially, will make the right use of it—not in attempts to reproduce Inigo Jones's style, but in endeavouring to catch that spirit of largeness and dignity of design, and power in the treatment of detail, which may be equally exemplified in other styles besides that in which our great architect worked.

NOTES.

Architects' Benevolent Society.

THE Annual Report of the Architects' Benevolent Society gives the result of the special appeal which was made by the President of the Institute to the profession in a circular letter in June last. The result was not very encouraging, amounting to an increase of annual subscriptions to the extent of 98*l.* 9s. 6d., with donations to the amount of 151*l.* 17s. 0d.; the cost of issuing the appeal having been 38*l.* 8s. 8d. A second and less formal appeal made by Mr. Emerson at the last annual meeting of the Society was, however, more successful, and has led to some very liberal donations from Mr. Macvicar Anderson, the late Mr. Brydon, Mr. Emerson himself, Mr. H. L. Florence, Mr. E. E. Grayson, Mr. Gruning, Mr. E. T. Hall, Mr. G. T. Hine, the Liverpool Architectural Society, the Nottingham Architectural Society, Mr. Norman Shaw, Mr. Aston Webb, and others. One cause of the difficulty in obtaining adequate subscriptions is, no doubt, that the architectural profession as a whole is a poor one, and that many do not like sending a subscription of a few shillings only, and do not feel that they can afford more. On the other hand, the number of applications for assistance is increasing. Perhaps the best thing to advise is to suggest to members of the architectural profession that a small assistance is better than none, and that 5*s.* each from 5,000 persons (the number to whom Mr. Emerson's first special appeal was issued) would have meant 1,250*l.*, instead of the much smaller result named above. But it is quite comprehensible that some people would regard the publication in a subscription-list of so small a sum as a confession of poverty which they do not like to make. But we do urge the profession to take into consideration the important claims of the Architects' Benevolent Society, and make an effort to assist in increasing its resources.

The L.C.C. Works Department.

THE half-yearly return of works completed by the Works Department of the London County Council, which was submitted by the Finance Committee at Tuesday's meeting of the Council, shows that most of the works have been carried out at what is called a profit, *i.e.*, at a cost slightly below the final estimate of the architect or engineer. There is reason to think that the Department would always be in this happy position if it dealt only with drainage and jobbing works and refused to undertake works of an architectural character, for the only cases in the present report where the cost has considerably exceeded the final estimate were the Redcross fire-station and Cobham buildings; the excess in these cases being 1,023*l.* and 1,129*l.* respectively. There is no doubt that under the new management the Department is doing better than in the early days of its existence, though it is hinted that there are some works now in hand that may not show "quite such good results" as those just reported. Probably before the best results are obtained, the Department will have to be reorganised and the cost of management, which is said to be excessive, reduced.

Hampstead Heath and the Tube Railway.

THE Hampstead Heath Protection Society have circulated a letter explaining their position in reference to the proposal to drive a tunnel railway under Hampstead Heath. In the course of this they say:—"We are not opposing the construction of the Tube Railway already sanctioned from Charing Cross to Hampstead, nor do we object to an extension of this railway outside the boundaries of the Heath in a northerly direction to Golders' Green. But the Society are very strongly opposing the present proposal to tunnel under the Heath. This proposal they consider to be absolutely wrong in principle. The suggestion that a tunnel under the Heath might be allowed provided no station were made within the precincts of the Heath is plausible but quite unworthy of support. No railway, either under or over the Heath, should be allowed. It should avoid the Heath altogether. The Commons Preservation Society and the National Trust for Places of Historic Interest or Natural Beauty write to us that they quite agree with us in thinking that the right principle is to give access at as many points as possible on the border, but to keep the Heath one undivided whole." We are entirely in agreement with this view.

The Electric Corrosion of Pipes.

THE evidence given by experts before the Select Committee appointed by the House of Commons to report on the London United Tramways Extension Bill was most interesting and instructive. Sir William Preece said that there were always large electric currents flowing through the crust of the earth which had some connexion apparently with sun spots and auroral disturbance. It was suggested that currents measured by the opponents of the Bill might possibly be due to natural causes, and that wherever rails and pipes were laid they might be found. Professors Ayrton and Perry, however, described tests they had made in Clapham-road. In the afternoon when the traffic was slack in the City and South London Electric Railway, the current in the pipe tested was ten amperes, but in the evening about seven o'clock it rose to fourteen amperes. This is an extraordinary result, seeing that there are many other pipes in the same road, and that the electric railway is enclosed in an iron tube 50 ft. below its surface. It was noticed that the pipe was eaten away on the side next the generating station, where the current would naturally leave to get back to the dynamo. We think that this experiment, and some of the others described to the Committee, prove beyond the possibility of a doubt that there are leakage electric currents, in some cases of great magnitude, in the pipes in the neighbourhood of electric tramways which do not use an insulated return. Londoners are to be congratulated that the London County Council, acting on the experience Dr. Kennedy gained by a visit to America, has adopted a system of insulated returns for its tramways. Dr. Silvanus Thompson calculated that a current of one ampere would produce in an iron pipe 15 grains of corrosion per hour, which works out to 14 lbs. a year. This is the maximum possible corrosion it could produce. If the pipe were in a dry conducting soil the corrosion would be much less. The water companies are to be congratulated on the evidence they brought before the Committee; for although their electrolysis clause was rejected, they have proved to unbiassed electricians that even when an electric tramway with uninsulated return satisfies the Board of Trade regulations considerable damage may be done to neighbouring pipes by leakage currents. The question is bound to arise again, and as time goes on the evidence of the damage done will get stronger and stronger. In our opinion also, evidence will soon be forthcoming of damage done by leakage currents from three-wire direct current supply systems.

The Baltic Mercantile and Shipping Exchange.

ON June 25 the Lord Mayor laid the foundation-stone of the buildings which are being erected for this company (formed in March, 1900), at an estimated maximum cost of 175,000*l.*, after the plans and designs of Mr. W. Wimble and Mr. T. H. Smith as joint architects. The site, a freehold area of 28,700 ft. superficial, was purchased from the City of London Exchange Syndicate, and has been cleared by the demolition of Nos. 26-8, St. Mary Axe, Nos. 22-4, Bury-street, and all the houses in Jeffrey's-square, together with the square as well. Some portion of the ground will be appropriated for the widening of Bury-street and St. Mary Axe. The new buildings will occupy 18,515 square feet of the total area, and it is calculated that they will provide ample accommodation for the members, 3,000 in all, of the Baltic Exchange in Threadneedle-street, and the London Shipping Exchange in Billiter-street. The new premises will comprise an exchange 152 ft. long, 94 ft. wide, and 30 ft. high, with a central dome 30 ft. in diameter; a general exchange having a total area of more than 15,000 ft.; reading, club, and arbitration rooms; some four hundred offices, and other accommodation, to yield an estimated net annual rental of 13,700*l.* The former South Sea House (1773-4), in Threadneedle-street, was vacated on September 29, 1900, by the Baltic Society, who, we understand, sold the premises and site for 350,000*l.* to the British Linen Company Bank of Edinburgh for their proposed offices. In 1855-6 the South Sea House was bought for 55,700*l.* The Baltic Company migrated thither when the "Baltic" coffee-house in Sweeting's-rents had been demolished to give place to Tite's Royal Exchange. The City Corporation have formulated a scheme for widening Threadneedle-street, by setting back the frontage on that site at a cost of 14,400*l.* We should point out that the *earlier* South Sea House (at one time the *old* Excise Office), in Old Broad-street, was destroyed by fire in 1826; its site was then acquired for the buildings of the City of London Club, 1833-4, erected after the plans and designs of Philip Hardwick, R.A.

The Fine Art Society.

ON Wednesday there was a private view, at the Gallery of the Fine Art Society in New Bond-street, of a collection of water-colour drawings by Mr. A. N. Roussoff, chiefly of scenes in Venice. As on former occasions, the artist appeared rather as a capable executant of topographical scenes in water-colour than as an artist in the higher sense; his drawings are very good, however, and he has an eye for the effect of colour in old buildings, and draws architecture well, which cannot be said sometimes of painters who take in other respects a higher line. In the Venetian scenes in which water is an element, the water seems rather neglected in some cases; it is a surface of colour without the effect of water, except what is gained by the rather easy expedient of reflections of special objects. "Morning on the Lagune" (3) however, is a good effect; also "On the Lagune" (6) with the coloured sails of the craft; but we like the architectural subjects best. Among these may be named "Entrance to the Canal Grande" (13) where S. Maria and the attendant buildings are brilliantly indicated in bright light; "Murano, Afternoon" (11); "Fallen Grandeur" (14), an old palace with the clothes of the present humble inhabitants hung out to dry from the windows; "Cortile behind San Giorgio dei Greci" (22), with the lantern of the campanile rising in bright light in the background; "Near the Giardini" (34), and "San Michele, near Murano" (37).

THE GROSVENOR ESTATE: AND PIMLICO, BELGRAVIA, AND MAYFAIR.

1801-1900.

IN giving a sketch of the history of this portion of London during the past century, we will first direct attention to three or four early plans of the Ebury, Audley, and Goring properties:—Amongst the Duke of Westminster's muniments is Henry Morgan's "mapp or plot of the Lordship of Eburie being situated in the Parish of St. Martins in the Fields, Mrs. Mary Dammison [*sic*] being Proprietess," 53 in. by 23 in., 1675. The lordship, fairly rectangular in shape, has the West Bourne for its western boundary with the road from Knightsbridge to Hyde Park-corner along its northern side. On the map are plotted "King-road," which now traverses Eaton-square as laid out in 1827 by Cubitt in the Five Fields, the "Old Road" (Ebury-street), the "Road from Chelsey to Goring House" (Buckingham Palace-road), having the lordship house and garden at its southern end near where is now Eccleston Bridge, and the "Nete House" close to the south-western corner of Eccleston-square. In the boardroom of St. George, Hanover-square, Vestry Hall hangs a finely-executed plan of the parish, "surveyed and delineated in . . . . 1725 by John Mackay, senr. and junr., mathematicians, of Saint James, Westminster." It is drawn, to a scale of 10 poles in an inch, upon

sheets of vellum, and was renovated ten years ago. A reduced copy of this map is given with the present issue (see lithograph). With that survey may be usefully compared Rhodes' plan of the parish, 1761, and the drawn plan in the Crace collection of the Grosvenor (Mayfair) estate, as in the year 1723, with the intended streets around Grosvenor-square. The parish of St. George, taken out of that of St. Martin-in-the-Fields, was so constituted on March 25, 1725.

The sub-manors of Eyebury or Ebury (the modern Pimlico and Belgravia), Hyde (Mayfair and Hyde Park), and Neyte (Kensington Gardens) constituted the ancient manor of Eia, computed at the time of the Domesday survey to extend over ten hides, or about 890 acres. Eia, comprising the Bulunga fen (Ebury) in Ossulston hundred of King Edgar's reputed charter, 971, to Westminster Abbey, was at one time held by Asgar in virtue of his office as the King's stallere or Master of the Horse and standard-bearer. William I. gave a grant of all the lands held *ex officio* by Asgar to Geoffrey de Magnavilla, ancestor of the De Mandevilles, Earls of Essex. Geoffrey, by one account, bestowed Eia upon the Collegiate Church of St. Peter at Westminster, in return for his burial there. We hear of Eybery farm, covering 430 acres of meadow and pasture, *temp.* Queen Elizabeth, who leased it at 21*l.* per annum to one Whashe. The Ebury property was subsequently brought in marriage by Mary, only child and heir of Alexander Davis (or Davies) of Ebury to Sir Thomas Grosvenor of Eaton, third baronet—they were married in 1676, in St. Clement Danes Church. Alexander Davis had inherited much of his property here from his elder brother, Sir Thomas Davis, a bookseller in St. Paul's Churchyard, and Lord Mayor in 1676-7. Thomas Davis—"my old schoolfellow at Paul's," writes Pepys—was grand-nephew and co-heir of Hugh Audley, or Awdeley, a member of the Inner Temple, who died "great" by repute and "infinitely rich" on November 15, 1662. He had acquired by usury real property estimated, at his death, to be worth 400,000*l.* His will, made on November 4, and proved on November 24, 1662, is rehearsed in vol. vi. (1871) of J. G. and R. C. Nichols' "Herald and Genealogist." We may observe that the will, which occasioned forty years' litigation, relates to his personal property only: he had settled his landed property upon his relations in his lifetime, subject to his own life interest therein. His third sister, Elizabeth, had three co-heirs, one being the Sir Thomas Davis mentioned above. Audley's land in London was fairly co-terminous with the later Mayfair.

The story of Mary Davis's life is a sad one. Her father, a scrivener, who married Mary, daughter of Dr. Richard Dukeson, Rector of St. Clement Danes, died intestate in his thirtieth year, on July 3, 1665, leaving a widow (who soon married again) and an infant child. He was buried in the churchyard of St. Margaret, Westminster. When Mary Davis was but ten years old a private Act, 17 Car. II., was passed to vest her inheritance in trustees; in the following year she was married to Sir Richard Grosvenor, who was scarcely nine years older than herself. Her husband died in his forty-fifth year; his widow died in 1730, having passed the latter thirty years of her life demented and under restraint. Bourdon House, the traditional home of her childhood, yet remains in Davies-street; it is one of the oldest houses on the estate, and contains some finely-carved woodwork apparently of early eighteenth-century date.

Thus the two estates ultimately passed to Sir Richard Grosvenor, Bart., who succeeded his father, Sir Thomas, the third baronet, in 1700. Sir Richard Grosvenor laid out Grosvenor-square in or before 1716; before his death (1732) he had approved of plans for laying out further portions of his estate, chiefly around Grosvenor-square, upon lines which—in Mayfair—had suffered but little change until about thirty years ago. His nephew, Sir Richard, seventh baronet, elevated Baron Grosvenor of Eaton, 1761, and advanced Viscount Belgrave and Earl Grosvenor, 1784, was father of Robert, second Earl, advanced Marquis of Westminster, 1831.

Boundaries.—The Mayfair portion of the Grosvenor estate is bounded on the west by Park-lane from Oxford-street to South-street; on the south by South-street, Farm-street, and the north side of Berkeley-square; on the east by Avery-row (see also "Pimlico and Belgravia") and South Molton-lane that mark the course of the Ay Brook or Tyburn separating it from the Maddoks property; on the north by Oxford-street which in the plan of 1723 is named "Worcester-road." The Ebury portion is bounded on the north by the high road between Albert Gate at Knightsbridge and Hyde Park-corner; on the east by Grosvenor-place, Lower Grosvenor-place, and by a line along the Tyburn between Carlisle-place and Vauxhall Bridge-road, then along Tachbrook-street, and so between Bessborough-place and the Gasworks to the Thames; the western boundary, being identical with the course of the West Bourne and the boundary of St. George's parish, runs almost due south from Albert Gate, behind the east side of Lowndes-square, behind the east side of Cadogan-place, along the east side of Sloane-square, down Holbein-place, then by a curve around Wellington Barracks and the site of Ranelagh to the junction of Chelsea Bridge and Commercial roads, and so to the Thames at the Victoria Pier. From those confines should be excepted a small spoon-shaped portion, the Lowndes property, between Lowndes-square and Wilton-crescent; and there should be added the outlying site of Peterborough, or Belgrave, House and grounds, now traversed by Page and Grosvenor streets within the angle formed by the junction of Horseferry and Grosvenor roads, bought by Alexander Davis of Ebury.*

MAY FAIR.

The manifold changes that have been made within the last thirty years or so in this quarter of the town, and for their greater portion upon the Grosvenor Estate, comprise an extensive demolition, with rebuilding, of house property in Park-lane, North and South Audley-streets, Park, Duke (Grosvenor-square), Davies, South Molton, Green, Brook, Mount, Aldford (until 1888 Chapel), Down, and Curzon-streets, Grosvenor-place (1767), Charles-street, Grosvenor-square (renamed Carlos-place), the south side of Oxford-street between Park-lane and South Molton-street (including Hereford-gardens), North-row, and Shepherd's-market, together with a large number of mews, minor thoroughfares, and so on, whose sanitary condition had become unsatisfactory. Chesterfield-gardens absorbs most of the garden of Chesterfield House (Isaac Ware, 1748), of which the colonnades on either side are now closed in. Sir Michael Arthur Bass, Bart., elevated Baron Burton in 1886, bought the house from Charles Magniac, M.P., in 1885, when it was rehabilitated under Mr. R. W. Edis's superintendence. In the autumn of 1896 were pulled down Nos. 94-104, Park-street (east side), between Green-street and Lees-mews, together with Nos. 55-9, Green-street (south side), between Park-street and Hampden House, the Duke of Abercorn's, and premises in the rear abutting upon Lees-mews and Shepherd's-place-buildings. The whole, two houses at its west end excepted, of Mount-street has been rebuilt. Of the new premises we may mention the shops at the corner of South Audley-street, 1893, by Mr. A. T. Bolton, and No. 54, at the corner, north, of Park-street, by Mr. Fairfax B. Wade for Lord Windsor. The old St. George's Vestry Hall (1789), rebuilt at a cost of 15,362*l.*, the site costing 11,624*l.*, was opened on April 23, 1887. The architects were Messrs. Ernest George & Peto, who designed also the adjoining block of chambers and shops [May 15, 1886].† St. Mark's Church, North Audley-street, by Peter John Gandy Deering, R.A., who took the Erectheum as his model, was built in 1825-8, and cost 5,600*l.* In South Audley-street, Nos. 61-2-3 are by Mr. W. Lambert, 1890; Nos. 69-70-1 were built in 1899 by Mr. Lovatt, who contracted for 12,500*l.*, Mr. Howard Chatfield Clarke being the architect; the Public Library in Chapel-place North, near the Grosvenor Episcopal Chapel, and opened on July 1, 1895, is by Mr. A. T. Bolton; Audley Mansions, North Audley-street, are by Mr. Wimperis. We may mention, too, in Green-street, No. 32, Lord Ribblesdale's, by Mr. Sidney R. J. Smith, and a block of residential flats by Messrs. Henry S. Legg & Son, 1896, Messrs. Bywaters & Sons being the contractors for 12,847*l.*; the Coburg Hotel in Carlos-place (as widened) and a house by Messrs. Isaacs and Florence, 1895-6; No. 3, Hertford-street, by Mr. W. Flockhart; a block of five houses in South-street [December 11, 1897], built by Mr. Willett, the architect being Mr. J. J. Stevenson; and the two sets of three-story stables on the south side of North-row, Park-street, by Mr. Sidney R. J. Smith (1898). Messrs. W. Cubitt & Co. built the block of six houses on the east side of Park-street, between Green-street and the "Hereford Arms," in 1896, from Mr. H. O. Creswell's designs. A. Salvin (*obiit* December 17, 1881) prepared the plans and designs of No. 9, Chesterfield-gardens, distinguished by its fine staircase, for the late Lord Leconfield, but advancing years compelled him to relinquish its completion. In 1835 Salvin carried out extensive alterations at Grosvenor (formerly Gloucester) House, to which T. Cundy added the Roman Doric colonnade or screen facing Upper Grosvenor-street in 1842, and the west wing, or picture gallery, facing Park-lane; the garden wall along Aldford (formerly Chapel) and Park streets was rebuilt in 1895-6. In 1889 the parish burial ground, 1½ acres, lying between Mount and South streets, was opened to the public.

Farm-street.—The church of the Immaculate Conception, 1846-9, the first erected in London for the Order of Jesuit Fathers, is by J. J. Scoles [June 2, 1849]. Clutton added the chapel of the Blessed Sacrament in 1858-9. The high altar given by Miss Monica Tempest, of Broughton Hall, Yorkshire, at a cost of about 1,000*l.*, was designed by A. W. Pugin; the window above it is by Wailes. It is believed that Scoles based his design for the early fourteenth century south front upon that of the south front of Beauvais Cathedral. Of the Fathers' adjoining residence we published Messrs. Goldie, Child, and Goldie's original designs, modified in the building, on July 10, 1886. Last year Mr. Romaine-Walker began an enlargement, with a new aisle, of the church to cost about 15,000*l.* For the rebuilding of the United Steuart and St. George, Hanover-square, Parochial Schools [December 17, 1898] a tender of 13,675*l.* by Messrs. Dove Brothers was accepted in June, 1897. By reason of the exigencies of the site Mr. P. A. Robson's planning is unique after its kind. The playgrounds are sunk, and extend beneath the main building, whilst the cookery school is entered from the girls' playground, beneath the teachers' houses, the latrines being arranged in a tower between the houses and the schools. Mr. Robson's original plans, placed first in a limited competition in 1896, were not carried out by reason of certain revised requirements on the part of the late Duke of Westminster, who contributed a considerable sum besides the site. A new scheme was accordingly designed.

Park-lane and Hamilton-place.—In pursuance of their Park-lane Improvement Act, 1869 (32 and 33 Vic., c. 134), the late Metropolitan Board of Works extended Hamilton-place, built upon Crown lands in 1805, northwards into Park-lane, and at the same time increased its width from 30 ft. to about 60 ft. E. Thirst and W. Webster were the contractors for the improvement, the net cost being 110,968*l.* The new thoroughfare was opened in June, 1871. Londonderry (formerly Holdernesse) House was designed by Samuel Wyatt (*obiit* 1807) and his nephew, B. Dean Wyatt (*obiit* in or about 1850). In 1812 Sir John Soane designed No. 18, Park-lane. On the three-sided site at the corner of Deanery-stree, near Stanhope Gate, and facing southwa ds, stands Dorchester House [August 28, 1852], built in 1848-57 by W. Cubitt & Co. for the late R. S. Holford, M.P., from the plans and designs of Lewis Vulliamy (*obiit* 1871). The house contains some of the finest domestic work of Alfred Stevens who died in 1875, especially the fixed furniture and the chimney-piece of the dining-room, of which latter one figure is illustrated—after a drawing by Mr. W. R. Lethaby—in our number of April 21, 1894. In December, 1892, were demolished the seven houses between Aldford and Mount streets; the Office of Woods and Forests sold the materials of Nos. 7-10 and of No. 13, Grantham-place on April 25, 1900. Mrs. Brown presented the drinking-fountain at the junction with Hamilton-place; it commemorates the Fathers of English Poetry, and is the work of Thomas Thornycroft, 1875. No. 1, Park-lane is by A. Peebles (*obiit* May 21, 1891), Breadalbane House, 1818-24, by Wm. Atkinson (*obiit* May 22, 1839), and a recent block of houses by Mr. Sidney R. T. Smith. At the corner of Aldford-street is No. 26, built in 1895-6 of Portland stone by

* See our article "Westminster, Old and New," in *Builder* of January 12, 1901 (p. 36).

† Dates within *square* brackets relate to illustrations in the *Builder*.

Messrs. Trollope after Messrs. Balfour & Turner's designs and plans, for Mr. Beit, the site costing, it is said, 170,000*l.* The decorative panels on the exterior walls are by Mr. Harry Pegram, the general interior carving by Mr. L. A. Turner. The late Mr. B. T. Barnato's house, No. 25, since purchased by Sir Edward E. Sassoon, Bart., occupies the site of (old) Stanhope House, bought with the freehold for 50,000*l.* It was built by Messrs. Colls & Sons, whose contract for the principal floors only in carcase amounted to 39,940*l.*, Mr. T. H. Smith being the architect [October 10, 1896]. Messrs. Balfour & Turner designed Nos. 2 and 3, Balfour-place, constructed of Suffolk bricks with brown Portland stone dressings [June 12, 1897]. Stanhope House, on the site of No. 8, Great Stanhope-street, 1899, is by Mr. W. H. Romaine-Walker, and is remarkable for its elevations entirely worked in grey Forest of Dean stone. Brook House, Lord Tweedmouth's residence, 1867-70, by Thomas Henry Wyatt (*obiit* 1880), erected about thirty-five years ago, is, we believe, one of the first mansions in this part of the town constructed of the now prevalent red brick with stone dressings [July 23, 1870]; J. & C. I'Anson were the contractors; Wright & Mansfield executed the elaborate decorative works.

Grosvenor-square.—Since the houses were renumbered in 1888, a circumstance one is apt to overlook, as in the similar instances of Berkeley and St. James's squares, we may state that the historical No. 39, Lord Harrowby's, the projected scene of the Cato-street conspiracy, February 23, 1820, is now No. 44. Two houses on the north side with what was formerly Lord Derby's—built in 1773 by Robert Adam—and those at present numbered 3, by Sir John Kelk, Bart. (*obiit* 1886), for his own residence, 4, 26-7, 30, 38-9, 40-1-2 have been rebuilt. No. 26 is on the site of the former No. 23, Lord Derby's; No. 30, John Wilkes's, is re-numbered "35."

Brook-street.—In the autumn, 1894, were sold the effects of Claridge's Hotel, and the building was pulled down in December. Mivart established the hotel in the days of the Regency; it is not generally known that a suite of private rooms were reserved there for the Prince Regent. The courtyard was rebuilt by Mr. W. D. Caroë [June 13, 1891]. Messrs. Trollope erected the new hotel reopened in November, 1898, by the Savoy Hotel Syndicate. Constructed, at a cost of about 120,000*l.*, of the Essex brick so largely used upon the Duke's estate, with rubbed brick dressings and red Mansfield stone, the fabric cost about 120,000*l.* Mr. C. W. Stephens was the architect, Messrs. Ernest George & Yeates designed and supervised the interior decoration of the ground and part of the first floors.

Curzon-street, Bolton-row, and Shepherd's-market.—In November, 1899, the site of Curzon-street Chapel, bought from Lord Howe, and of a part of Market-street, was cleared for some buildings to be erected by Messrs. Romaine-Walker & Besant for the Duke of Marlborough. The *Penny London Morning Advertiser* of June 4 and 6, 1744, announces the building of the chapel—upon a plot of ground opposite the "old chapel"—and states that marriages would be performed there upon payment of one guinea, "Mr. Keith having given his register to the new clergyman." See also a "Note" in our columns of December 23, 1899. The carved oak pulpit has, we believe, been removed to the parish church of Penn, Buckinghamshire. Some portion still remains of the market buildings, named after Edward Shepherd—the architect, it seems—who in 1708 was rated to the poor of St. Martin-in-the-Fields parish "for ground-rent of the fair, market, and one house, 1*l.* 1s." The fair, a survival of one granted by Edward I. to St. James's Hospital, was established *temp.* James II., and held at Maytime in the Great Brook Field, fourteen acres on the right bank of the Ay Brook or Tyburn, a part of Lord Berkeley of Stratton's estate, and now covered by Curzon, Charles, Farm, and Hertford streets, Chesterfield House, Chesterfield-gardens, Shepherd's-market (old), Bolton-row, &c. Curzon-street marks the principal line of the stalls and booths; the ducking-pond was in Hertford-street. Building upon the land began in 1703-4; the fair, discontinued in 1708, but for a while revived, was finally abolished about 1770. At their meeting on December 3, 1886, the late Metropolitan Board of Works resolved to rename Charles-street, Grosvenor-square, as Carlos-street (since renamed Carlos-place) and to incorporate Bolton-row, Nos. 1-13, with Curzon-street, Nos. 1-60; the houses in the latter street are now Nos. 1-72. Messrs. Perry & Co., who contracted for 24,282*l.*, built the mansions, No. 17, Stratton-street, and having a return front to Curzon-street, from Mr. R. J. Worley's designs and plans [March 4, 1893]. In Charles-street, Berkeley-square, No. 7 was rebuilt by Thomas Little (1802-59), and No. 11 by Messrs. Wimperis & Arber [July 18, 1891]. No. 11, Hill-street, has been recently rebuilt for the Duke of Newcastle by Mr. R. W. Edis, who prepared the designs for several blocks of houses and flats upon the Grosvenor estate.

Davies, Gilbert, and Duke streets.—The materials of Nos. 56-76, Davies-street and of Grosvenor-market, at the north-east end, were sold on August 20, 1889; on May 11, 1893, those of Nos. 67-73 (odd); in 1898-9 the north end of the street was widened and straightened into Oxford-street. No. 56 is the headquarters of the 1st Middlesex (Victoria and St. George's Rifles) Volunteers, built after Mr. C. H. Shoppee's plans and designs, and opened by Catherine Duchess of Westminster on December 6, 1890 [October 24, 1896, "Sketches of London Street Architecture," VII.]; No. 53 is the Grosvenor estate office. St. Anselm's Church and vicarage, by Messrs. Balfour & Turner [February 22 and April 18, 1896], has replaced Professor Cockerell's Hanover Chapel [March 2, 1895] pulled down in October, 1896; the Commissioners of Woods and Forests acquired the chapel and its site for 45,000*l.*, which was devoted to the building and endowment of St. Anselm's. Messrs. Walter Holt & Son's contract amounted to 20,000*l.*, the late Duke giving the site. The church is a singular structure, utterly unlike any other place of worship in London. In Duke-street is Mr. Alfred Waterhouse's Congregational Church [January 18, 1890] erected by Messrs. Shillitoe & Son, of Bury St. Edmunds, at a total cost of nearly 30,000*l.*, with the proceeds — about 37,000*l.*—of the sale by the trustees of the old King's Weigh House Chapel, originally founded in 1662 at Fish-street-hill, of which the site had been taken in 1883 for the Inner Circle railway. With the church was amalgamated the adjacent Robert-street Chapel, the parsonage—also by Mr. Waterhouse—we illustrated on August 20, 1898, No. XXVII. of our series "Sketches of London Street Architecture." The houses at the corner of Davies-street and South Molton-lane (1889) are by Messrs. Wimperis & Arber. Mr. W. D. Caröe designed the new Hanover schools in Gilbert-street [February 20, 1892], opened on March 4, 1889, by the late Duke, who gave the site to replace the schools in South Molton-street, Messrs. Turtle & Appleton's contract for the buildings being 5,115*l.*

Notabilia.—Grosvenor Episcopal Chapel, South Audley-street, 1730. Several houses in Mayfair by T. Cundy. Some interior fittings of Mr. Stewart Hodgson's house, South Audley-street, removed thither from No. 8, Billiter-square, E.C. (1730-1878). No. 2, Seamour-place, Park-lane, modernised in 1835 for Lord Ducie by J. B. Papworth (*obiit* 1847). Nos. 16-26, Mount-street, by Messrs. Read & MacDonald. Block of flats, No. 51, South-street, by Mr. E. K. Purchase. House in Audley-square, for Lord Arthur Russell, by T. H. Wyatt.

Rebuilding upon the Grosvenor Estate—The Improved Industrial Dwellings Company erected Stalbridge-buildings in Lumley-street (opened March, 1887), Clarendon-buildings in Balderton-street (1872), Balderton-buildings (1887), Cavendish-buildings in Gilbert-street (1889), Chesham-buildings and four other blocks in Gilbert and Robert streets (1886-92) on the ground between Oxford-street and Grosvenor-square and Brook-street. Duke-street-mansions were built in 1887. The late Duke opened the public garden in Duke-street on November 9, 1889. At various dates within the interval August, 1888, to August, 1898, were sold at auction the materials of Nos. 19-31, with the Grosvenor riding-school, South-street; Nos. 3-6, 21-9, and 33-4, North-row; 1-5, Brown's-place, Park-street; 25-31 and 35-40, North Audley-street; 64-8 and 70-70A, South Audley-street; 30-8, with Adam's-mews in the rear, 58-63, and 68-77, Mount-street; 1-3, 22-9, and 31-3, Green-street; 5, 7-14, and 25-36, Aldford-street, with Robson's-yard, Aldford-mews; 1-13, and 107-19 (odd), with part of Eaton-place, 18-28, and 30-42 (even), with Reeves-mews and Bell-yard in the rear, Park-street; 43 and 45, Farm-street; 12-8, Norfolk-street; 1-5, Ham-yard, and 2-8, Street's-buildings, Park-lane, and the seven houses in Park-lane between Mount and Aldford streets; 24-9, Robert-street; 5-7, Cock-yard; 67-73 (odd), Davies-street; and 52 and 54, Brook-street. In May last the Company erected on the front of Chesham-buildings a tablet to commemorate the late Duke of Westminster's philanthropic efforts for the better housing of the working classes in London.

At Cambridge House (then numbered 70), South Audley-street, John Robins, the auctioneer, sold Queen Caroline's effects. Nos. 11-2, North Audley-street, by Lord Burlington, for the Countess of Suffolk. Grosvenor-square lighted with oil lamps until a late period; some of the iron link-extinguishers and stone obelisks have survived in the square, at Nos. 28, 37, and 44-5; and in Curzon, Hill, and South Audley streets.

In the evening of Monday, February 8, 1886, a demonstration of the unemployed begun in Trafalgar-square ended in a riotous march of some 1,500 "Socialist Democrats" along Pall Mall, St. James's-street, and Piccadilly, considerable damage being done on the way, into Mayfair, where many houses and shops were attacked and pillaged.

PIMLICO AND BELGRAVIA.

The Crace collection contains a set of four interesting plans copied by Frederick Crace from the originals which show the land from Piccadilly to the Mulberry Garden and Goring Great Garden that Sir Thomas Grosvenor sold to the Earl of Arlington for 3,500*l.*, by a conveyance dated October 22, 1681; the Goring estate, as in 1640, with Goring House, on the site of which now stands Buckingham Palace; and Sir Charles Sheffield's land, formerly the Mulberry Garden, four acres, where are now the grounds and the north-west wing of the Palace. Charles Goring, second and last Earl of Norwich, let Goring House in 1666 to the Earl of Arlington; on the west side of its fountain garden were the orchard and kitchen garden belonging to Hugh Audley. The Mulberry Garden, planted by James I. in 1609 for the home manufacture of silk, and "to wean his people from idleness and the enormities thereof," subsequently became a highly fashionable resort, and then was demised by Charles II. in 1673 to Lord Arlington.

Buckingham Palace.—On July 13, 1837, Queen Victoria first occupied the Palace, which had been erected after John Nash's plans and designs—his pupil, Charles Mathews, the comedian, made the drawings—during the reigns of George IV. and William IV., but it is said was never occupied by those two Sovereigns. For Nash's palace was taken the site of Buckingham, more correctly Buckinghamshire, House, built in 1703-5 from the designs of Captain Wynde, or Wynne, on the site of Arlington, formerly Goring, House, which in 1689 Isabella, Duchess of Grafton, daughter and heir of Lord Arlington, had sold to John Sheffield, Duke of the County of Buckingham and Normanby. The house, as rebuilt by the Duke (*obiit* February 24, 1721), was sold in 1761 for 21,000*l.* by Sir Charles Sheffield, and settled upon Queen Charlotte, by the name of "The Queen's House," in lieu of Denmark House in the Strand. In Vol. II. of Pyne's "Royal Residences" is printed a long letter addressed to the Duke of Shrewsbury, wherein the Duke of Buckinghamshire gives a charming account of his home. It is also described in De Foe's "Journey through England." The house (see lithograph), constructed of red brick with stone dressings, in three floors, had two wings of two floors and an attic story with which it was connected by curved galleries. The principal elevation, facing north-east, had nine windows to each row, with two ranges of four pilasters of the Corinthian and Tuscan orders, the latter being above. The wings, used as offices and servants' rooms, were—as were also the galleries—fronted with Tuscan, Doric, and Ionic pillars. In the forecourt was a fountain basin with central sculptured figures.

In 1847 Blore enclosed Nash's quadrangle with an east front, 360 ft. long, facing the Mall; the forecourt was extended in that direction, the new railings and piers being by Decimus Burton (*obiit* 1881), the sculpture on the piers by John Thomas (*obiit* 1862); three years afterwards Nash's Marble Arch, 1825-7, was removed to Cumberland Gate, Hyde Park. John Nash designed the entrance to the Queen's Mews, 1824, which cost 63,181*l.* The mews clock by Vulliamy has stone dials 6 ft. 10 in. in diameter and sunken figures with a sunken centre traversed by the hour-hand, in order to eliminate nearly all error arising from parallax. Blore's estimate of 150,000*l.* for the new works included extensive re-arrangements in the northern and southern wings, new kitchens, guard-house, redrainage, and the park-gates at Buckingham Gate. Sir James Pennethorne added the state ballroom, supper-room, and galleries in the south wing.

Buckingham-gate and Buckingham Palace-

road.—In the spring, 1900, James-street was renamed Buckingham-gate. Turning to Salway's survey of 1811, we see that the houses between James-street and Charlotte, now Palace-street, form Stafford-row, next (south) are Queen's-row extending to Prince's-row, opposite the "Bag o'Nails" and the "Goat" in Arabella-row, and then Dukes-row and the road "to Battersea-bridge." Stafford-row was named after Sir William Howard Viscount Stafford, beheaded in 1680, the second son of Thomas, Earl of Arundel, Surrey and Norfolk, for whose wife, Aletheia, was built by Nicholas Stone, the adjacent Arundel-house, latterly known as Tart Hall, pulled down in or about 1720. On the site of the "White Horse" at the corner of James-street and Stafford-row is the office of the Duchy of Cornwall, by Sir James Pennethorne [November 3, 1855], built instead of the former office in Somerset House in terms of an Act passed in 1854 (17-8 Vic., c. 93) with a sum of 16,889*l.* voted by Parliament. The opposite park gates are by E. Blore. At the corner (south) of Stafford-place stood until 1857 one of the famous old Pimlico taverns and tea-gardens, the "Gun," having a field-piece for its sign (see lithograph); Buckingham Palace Hotel stands on a portion of the site. The Grosvenor Hotel was built by Mr. Kelk in 1860-1 upon his own land at a cost of about 100,000*l.*, from the design of J. T. Knowles [June 1, 1861]. The exterior carving is by Dayman. The fabric measures 262 ft. by 75 ft. in depth, and rises 150 ft. to the top of the roof. The London, Brighton, and South Coast Railway Company framed a scheme in 1898 for an enlargement of their terminus from 6½ acres to 14½ acres, with extended platforms for eighteen instead of only eight trains by taking all the property between their existing boundary and the south-east side of the main road between Ebury Bridge and the station. Mr. Morgan, their engineer, has estimated that the project will cost 1,088,000*l.*; the hotel, bought by the railway company in 1899 for, it is said, 240,000*l.*, has undergone extensive structural alterations under the supervision of Mr. Alfred Waterhouse, R.A., and Mr. Morgan. Continuing southwards we reach Buckingham Palace-gardens, built upon the Grosvenor estate by Mr. Willett about seven years ago after Mr. J. J. Stevenson's plans and designs [December 30, 1893; and two of the porches February 9, 1895]; St. George, Hanover-square, Public Library opened on July 7, 1894, and Public Baths erected on the site of the old Baths, Nos. 80-90 (even), by Messrs. J. Mowlem & Co., at a cost of about 30,000*l.* after Mr. F. J. Smith's designs, and opened on May 7, 1890. The St. Peter's Institute and Gymnasium, 1890, is by Mr. E. F. C. Clarke; the National Training School of Cookery, originally established at South Kensington by the late Sir Henry Cole, was built in 1888-9 from Mr. Purdon Clarke's designs at a cost exceeding 8,000*l.* T. Cundy was the architect of St. Barnabas Church and Schools, 1850, which mark the site of the Orange Tea-gardens. At the end of Five Fields-row stood the "Star and Garter," famed for its equestrian exhibitions and fireworks. Holy Trinity, in Bessborough-gardens, is the first church built in London by J. L. Pearson, R.A.; it was erected at Archdeacon Bentinck's cost, and consecrated on May 25, 1852. Of the east window the central light is by Wailes, the six other lights are by Gibbs; the organ is by Walker.

The Waterworks, "Jenny Whim's," the Neat Houses, and (old) Millbank.—The lease for ninety-nine years of 89 acres in (old) Millbank to the Chelsea Waterworks Company expired on Lady Day, 1823. John Mackay's plan, 1727, is entitled "Plan of the Estate belonging to Dame Mary Grosvenor, let to the Chelsea Waterworks, near Millbank, on the River Thames"; Dame Mary was Sir Thomas Grosvenor's widow. Peter Potter drew a plan of that estate in 1815; in the fourth edition, 1819, of "Horwood's Survey" are marked "the cuts to supply Chelsea Waterworks and Pimlico Wharf." A "fire engine" stood at Pimlico Wharf on the south side of Shaftesbury-terrace, where is now the forecourt of Victoria Station; compare J. W. Wallis's map of 1823. Chelsea (Ebury) Bridge (see lithograph), situated between the "Monster" tavern and Stone Wharf at the south-western end of Bridge-row (Buckingham Palace-road) crossed the cuts at the north end of St. George's-row, latterly absorbed in Sutherland-terrace; see "Horwood's Survey," 1795 and 1819*. At the south-east end of the wooden bridge was the popular resort known as Jenny Whim's (or Jenny's Whim) tea-gardens and tavern, near the Flask. Next, northwards to Stone Wharf lay Avery Farm-row (see also "May Fair"), now Ebury-square, and the Dwarf tavern and gardens, afterwards New Spring-gardens, opposite the north-eastern end of Ranelagh-walk (or grove). The Waterworks Company, incorporated in 1722-3, had built their first engine-house at the Ranelagh osier beds, using the stones of St. Martin-in-the-Fields church pulled down two years previously. In 1812 they acquired about twenty acres for new works and an engine-house on the western side of Turpentine-lane (Westmoreland-street), which separated them from the Neat House Gardens; in 1829 their filtering-beds, which that Company first adopted, were at Thames Bank. In 1726 they purchased for 400*l.* the undertaking of the Millbank Water Company (1673); their reservoir, latterly known as the Queen's Basin, and often, but erroneously, cited as Rosamund's Pond, in the north-east corner of Green Park, was filled up in 1842; the reservoir (1725) in Walnut Tree-walk, Hyde Park, near the Duke of Gloucester's riding-house—where is now the enclosed round garden—remained, together with the engine-house, until 1835.

An excellent map published in 1836 for the Society for the Diffusion of Useful Knowledge delineates the Neat Houses as extending along the riverside between Millbank Distillery (west) and the southern end of old Grosvenor (since Belgrave) road (east), where is now St. George's-square. To the north of them lies Cross-lane, since Lupus-street; to the south are the present Pimlico Pier, the Royal Army Clothing Department, and All Saints' Church, Grosvenor-road, 1871 (T. Cundy, *obiit* 1895). The Distillery, afterwards Cook's, was established about ninety years ago at the south-western corner of Baker's-lane, since Caledonia-street. Neat House Gardens, until Basevi and Cubitt laid out that part of the estate, covered the three-sided area bounded by the present canal, Vauxhall Bridge-road (about 1810), and the later Grosvenor-road; Willow-walk, since Warwick-street, traversed their northern portion, and just beyond were the Osier Beds, which have since become the site of Hugh-street and Eccleston-square. The Neat Houses formed a settlement of cowkeepers and market gardeners. The Neate, formerly owned by the monks of St. Peter, and contained within the sub-manor of Ebury, is often confused with the equally ancient sub-manor of Neyte, now represented by Kensington Gardens.

Robert, second Earl of Grosvenor, advanced Marquis of Westminster in 1831, bought the Five Fields in 1825 for, it is said, 30,000*l.*,† and forthwith began to build upon the land, overlaying the marshy soil and filling up the many water-cuts of southern Pimlico with soil from the excavations for St. Katharine's Docks by the Tower; his chief builder was Thomas Cubitt. In 1825-9 George Basevi, the younger, planned and designed Belgrave-square, 684 ft. by 637 ft., the detached houses at the angles being by Hardwick and H. E. Kendall. Sir John Soane designed the gallery, with its lantern, of Chantrey's house in Eccleston-street. Lowndes-square, named after the ground landlord, W. Selby Lowndes, and built in 1837-9, stands on the site of the "archery and rural castle" plotted, 1819, by Horwood, who shows all vacant ground between Grosvenor-place and the West Bourne; on the square's southern side are seven houses, after the Italian style, by Lewis Cubitt. In Eaton-square, 1,637 ft. by 371 ft., is the church of St. Peter, 1824-7, by Henry Hakewill (*obiit* 1830), and rebuilt after its destruction by fire in 1836 by his son James from his father's original drawings. Some alterations of the interior were made in 1894 at a cost of about 2,100*l.* by Sir Arthur Blomfield (*obiit* 1899), who also designed the chancel screen and its gates.

St. George's Hospital and Grosvenor-place.—In the Foundling Hospital is Wilson's picture, 1746, of St. George's Hospital, formerly Lord Lanesborough's "country house," which was leased in 1733-4 by a committee for purposes of an infirmary. To the house, which faced Hyde Park, they added two wings, after I. Ware's designs as shown in his own contemporary print, 1733. The old hospital also is seen in the paintings of Hyde Park-corner, presented by Miss Emily J. Wood to the National Gallery in 1886. One picture is labelled "Unknown—Eighteenth Century (?)," the other "By James Holland—b. 1800, d. 1870." W. Wilkins (*obiit* 1839) rebuilt the hospital in 1828-30. Some extensive reparations were carried out in 1850. In 1859 an upper story and in 1868 a new wing were added by Arthur P. Mee (*obiit* 1868), and in 1896 Mr. H. Percy Adams added a suite of rooms which embraces the large (east) operating theatre as remodelled by him, the small (west) theatre, which is new, together with nurses' rooms, offices, &c.; the new southern block overlooks the sites of Tattersall's-yard with the "Turf" tavern at the yard's upper end (Grosvenor-crescent), and the former Lock Hospital. Richard Tattersall, the Duke of Kingston's stud-groom, began business there in or about 1778. George Tattersall built the subscription-room and the counting-house. In 1865 Tattersall's migrated to Knightsbridge, where on a site of two acres on the west side of the Green, new subscription-rooms, stables, an auction-yard, &c., had been built by Holland & Hannen from Charles Freeman's plans and designs. The Lock Hospital, of which the chapel (1764) gave a name to Chapel-street, was established in 1746, and forty years afterwards the Rev. Thomas Scott, the commentator on the Bible, founded the Asylum; the institution was removed to the Harrow-road, near Westbourne-green, where a new hospital for sixty patients had been erected, 1842-3, after L. Vulliamy's designs. Salway's survey of 1811 plots the "3rd Regiment of Guards Hospital" at the corner (north) of Osnaburgh-row, now Hobart-place, and then southwards, Grosvenor-street West, with the "King's-road" (Ebury-street) along its northern side. Next are Ranelagh-street, Arabella-row (Lower Grosvenor-place) and the "Bag o' Nails"—its sign being a corruption of Ben Jonson's Bacchanals—which is now No. 6, Buckingham Palace-road, and was greatly altered in 1890 by Mr. H. I. Newton. T. Cundy was the architect of the St. Michael's, the St. Peter's, and the Ebury-square Schools, of Belgrave Mansions, and of most of the houses in Upper and Lower Grosvenor-gardens, Grosvenor-place, Grosvenor-crescent, and Wilton-crescent.

Notabilia.—Churches: St. Paul, *Wilton-place*, 1842-3—T. Cundy; chancel enlarged and refitted, 1870—Withers. St. Saviour, *St. George's-square*, 1863-4—T. Cundy. St. Michael, *Chester-square*, 1844—T. Cundy; chancel extended, 1874-5. St. Gabriel, *Warwick-square*, 1853—T. Cundy; enlarged, 1897—Mr. Arthur Baker, of Messrs. Baker & Turrill; east window—Mr. Kempe; the church-house, hall, and clubrooms in *Glasgow terrace*—Mr. W. Campbell Jones. St. John the Evangelist, *Wilton-road*, 1873-4—Sir Arthur Blomfield. St. Mary, *Graham-street*, 1873-4—Withers. St. Philip, *Buckingham Palace-road*—Messrs. Demaine & Brierley [September 17, 1887]. Belgrave Chapel, *Halkin-street*, about 1825—Sir Robert Smirke (*obiit* 1867). St. Saviour, reredos, font, chancel screen, corona, and decorations—Mr. Romaine-Walker; the Sir John Tilley memorial window—Mr. C. E. Kempe. St. Barnabas, reredos—Messrs. Bodley & Garner.

House for Earl Brownlow, *Belgrave-square*, and house for the Earl of Oxford, *Halkin-street*—Sir Robert Smirke. No. 1, *Grosvenor-crescent*, the smaller drawing-room; and the drawing-room, 29, *Chesham-place*, 1886-7—Professor Aitchison. Lord Radnor's Conference Hall, *Eccleston-street*—W. A. Boulnois (*obiit* 1893). Nos. 1 and 1a, *Belgrave-square*, 1899—Mr. P. A. Todd. Block of residential flats, *North-street*—Mr. E. J. Sadgrove, a tender of 60,000*l.* from Messrs. Stephens, Barstow, & Co., of Bristol, accepted in February, 1897. Police-station, *Gerald-road*, *Eaton-square*, 1893—Mr. J. Dixon Butler. Pimlico Literary Institution, *Ebury-street*, 1830—P. J. Gandy-Deering. Pantechnicon, *Motcombe-place*, 1830, rebuilt after the fire 1874. Hudson's fireproof depositories, near Victoria Station, 1896-8, Mr. H. B. Gammon, contractor, 5,685*l.*—Messrs. W. H. Cross & Kekwick. Park lodge and improvements and gates, *Birdcage-walk*—D. Burton. Westminster (or Grosvenor) House, for Sir E. Antrobus—Sir G. G. Scott.

Buckingham Palace-road.—Soldiers' Home, altered and enlarged, 1898—Mr. Robert Curwen; block of residential flats—T. Pilkington (*obiit* 1898); shops and houses for the Grosvenor Hotel Company, 1894—Mr. W. A. Large.

Buckingham Gate.—No. 20, James-street—Mr. R. T. Blomfield (the carved brick frieze by Mr. Harry Pegram) [August 8, 1896]; Buckingham

* The position of the old bridge is shown on the St. George's Parish map in the present issue, at the head of the basin marked "Chelsea Water-works Canal."

† In "The Story of My Life" (1900), Mr. Augustus J. C. Hare says that the Court wished to buy the land, because it lay so close to Buckingham Palace, but thought the sum asked for was too much, and that Cubitt afterwards offered a ground-rent of 60,000*l.*

ALFRED THE GREAT.
Some examples of Anglo-Saxon Jewellery now being exhibited at the British Museum.
Ring found in the river Nen near Peterborough.
Ring found in Garrick St London.
Silver Brooch with eagle & dragon & inscription AELFGIVV ME AH (Aelfgifu owns me) - found at Cuxstone, Kent.
Gold Ring of Ethelwulf, Father of Alfred the Great King of Wessex (836-858) found at Laverstock, Wilts
Ring of Ethelswith Queen of Mercia (855-889) and sister of Alfred the Great found in W. Riding, Yorks.

Palace Mansions, built by Mr. J. J. Hall, of Dover, 21,000*l.*—Mr. C. J. C. Pawley. Old Westminster Chapel (1840)—John Tarring (*obiit* 1875). Palace Chambers—Messrs. Martin & Purchase [plan, January 26, 1901].

Dr. Dodd's Chapel in Charlotte (now Palace) street, converted, 1880, into St. Peter's, a chapel-of-ease to St. Peter's, Eaton-square. Flask-row renamed Semley-place, Ebury-street.

Ebury-square Garden leased (1884) at a peppercorn rent to the Metropolitan Public Gardens Association by the late Duke, who gave (1885) a general consent to the opening during the autumn months to the public of the square gardens, and of Lower Grosvenor Gardens under the Association's supervision.

SAXON ORNAMENTS OF THE TIME OF ALFRED THE GREAT.

IN connexion with the Millenary of Alfred the Great, a number of objects of Anglo-Saxon date are now being exhibited in the Central Saloon of the British Museum. In four cases are arranged examples of jewellery and coins, also MSS., charters, literary works, and laws of King Alfred. Some of the specimens of jewellery are of great interest; in more than one instance they have belonged, if not to the King, to one of his relatives, as is shown by their inscriptions, and the workmanship is in many cases remarkable for its extreme delicacy. In the centre is a careful copy by Messrs. Payne, of Oxford, of the famous jewel found in Somersetshire, between Athelney and Bridgwater, and now in the Ashmolean Museum at Oxford. Hardly less interesting are two rings —both of which we illustrate—one a gold ring which belonged to Ethelwulf, King of Wessex (836-858), father of King Alfred, and the other a ring of Ethelswith, Queen of Mercia (855-889), sister of Alfred. The first is of gold filled with niello, and the front is in the form of a mitre, the design being a tree (?) surmounted by a cross with a bird on either side. Below is an inscription, EĮHELVVLF Rx (Rex). This remarkable ring was found in 1780 in the parish of Laverstock in Wiltshire, and sold by a labourer to a jeweller at Salisbury for 34s. It is a good deal out of shape, as will be seen by the drawing. The second ring is also of gold and niello, with a bezel in the centre, ornamented with the Agnus Dei and the letters A and D on either side. The shoulders at the side have a dragon and a grotesque animal. "On the back of the bezel is scratched in three lines +EADEL SVID REGNA (Regina), showing that the ring once belonged to the sister of Alfred the Great, who married Burhred, King of Mercia, in 855. She died abroad, and was buried at Pavia." This ring was ploughed up in the West Riding of Yorkshire, between Aberford and Sherburn.

Of ten other rings in the collection, one is of agate, one of bronze, and the rest of gold. Of these we illustrate two, a fine gold ring found in Garrick-street, London, and a curious example found in the River Nen near Peterborough. The example from Tipperary was originally filled with slabs of garnet. A gold finger ring with a "pearled" edge bears the name of its owner, Ethred, and its maker, Eanred, the inscription being on a nielloed ground; and a very fine example of a ring, evidently once belonging to an ecclesiastic, found on the bank of the Trent, in North Lincolnshire, with a cross *potent fitchée*, and a beaded or "pearled" ornament similar to the example found in Garrick-street.

Two very beautiful brooches are shown, one of gold and enamel said to have been found in Scotland, the other in Thames-street, London. The workmanship and design are wonderfully delicate. There is also a brooch from Canosa, Southern Italy. Among the objects of simpler character are the bronze seal of Ethilwald, Bishop of Dunwich (c. A.D. 850), found at Eye, in Suffolk; a silver cross with a central blue stone surrounded by gold filigree, and a circular silver brooch (illustrated) with a marginal inscription, AELFGIVV ME AH (Aelfgifu owns me), the centre having a bird standing on a dragon. This was found in Kent, at Cuxstone, near Chatham, in 1822. A trial-piece of lead is also exhibited "on which the moneyer Ealdulf impressed his die for the silver penny of King Alfred"; this was found in St. Paul's Churchyard in 1841.

In another case are a great many Anglo-Saxon coins.

The MSS. include a very fine book of the gospels of early eleventh century date, with good illuminated letters.

In the illustrations given the rings, &c., are shown about their actual size.

THE BLUE COAT HOSPITAL COMPETITION, LIVERPOOL.

THE competition for the new Blue Coat Hospital at Liverpool has been conducted on somewhat different lines from those commonly adopted. No doubt the trustees decided that it should be limited to local architects, but to Mr. W. D. Caroë, who has throughout acted as the assessor, must be attributed the careful instructions which reduced the labour of the competing architects to the smallest possible amount. The competition was in two stages —preliminary and final. In the former the drawings were limited to a block plan (without drains) drawn to a scale of 32 ft. to an inch, and to plans of the several floors and a sufficient number of elevations and sections to explain the designs, drawn to 16-ft. scale. The drawings were to be in pencil, on drawing or tracing paper, tinted in a simple specified manner, and not mounted. Perspectives were expressly forbidden.

Twelve firms were asked to take part in the preliminary competition, and nine sets of designs were, we understand, received, from which the four best were, in accordance with the conditions, selected by the assessor. The authors of these were invited to take part in the final competition, but care was observed that the names of the authors of the respective designs were not made known either to the assessor or the trustees, nor were the designs of one architect shown to the other competitors, or to any one except those directly concerned in the conduct of the competition. Additional drawings were required in the second competition, but, with the exception of the detail drawings and the designs for the dining-hall, the original scales were adhered to. Each firm taking part in the final competition was promised a fee of 150*l.*, and in addition to this the authors of the successful design were to be appointed architects for the work and to be remunerated in accordance with the schedule of charges adopted by the Royal Institute of British Architects.

The four designs (numbered 1, 4, 5, and 9) received in the final competition were exhibited last week in the newsroom of the Liverpool Exchange, and we think that even the unsuccessful competitors will admit that the selected design is undoubtedly the best, both as regards plan and elevation. Mr. Caroë's report has not been published, but we understand that the design selected by the trustees for execution is that which he placed first. This is as it ought to be, and both Mr. Caroë and the trustees deserve the thanks of the competing architects for having conducted the competition so ably and honourably.

The existing hospital is set back from Lord-street, close to the cathedral, and is built in a simple type of English Renaissance around three sides of a forecourt, the two wings being connected by a wall and lofty railings with the entrance-gates in the middle. Competitors were informed that the trustees, "while not wishing to curb individual choice of style," were "desirous of recalling the architectural character of the front of the existing buildings." This desire has been borne in mind by all the four competitors, although with varying degrees of success, but only Messrs. Grayson & Ould have adopted the same type of plan as that of the existing hospital.

The accommodation required includes recreation-rooms and dormitories, together with all necessary conveniences, for 250 boys and 150 girls, classrooms for 300 boys and 200 girls, joiner's shop and cookery school (each for twenty-four scholars), rooms for the resident staff of masters, mistresses, and servants, common dining-hall, central hall with an area of not less than 3,600 square ft., kitchen department, gymnasium about 70 ft. by 35 ft., two lodges, clock tower, and a detached sanatorium with adjacent administrative block. The administrative department of the schools was to include an office and boardroom, ante-room for applicants and relatives, two small rooms for the medical examination of applicants, and a ladies' committee-room. A chapel to seat 800 and a swimming-bath 60 ft. by 30 ft. were to be shown on the drawings, but not included in the estimates. The cost, exclusive of the chapel and swimming-bath and of laying-out and fencing the grounds, was in the preliminary competition limited to 70,000*l.*, but this was increased in the final to 90,000*l.*

The new site is a large oblong, slightly wider at one end than the other. The long sides adjoin Prince Alfred-road on the west and Church-road on the east, and the ground rises from the latter to the former. Competitors were instructed that the main front must be towards Prince Alfred-road, but that the principal entrance might be in either road. This appears to have presented a difficulty. Church-road is by far the more important thoroughfare; it is wider than the other, and is also a tram-route, and would therefore appear to be the more convenient for the approach to the principal entrance. On the other hand, there is a large expanse of open ground on the opposite side of Prince Alfred-road, so that the buildings will be seen for a considerable distance on this side. The proper solution of the problem consists in giving to both fronts a satisfactory architectural treatment. Unfortunately for some of the competitors, they have been so concerned with the frontage to Prince Alfred-road that the Church-road front has been left to take care of itself, and, in one case at least, even the plan has been sacrificed to the dignified treatment of the principal front.

The successful design (No. 4) is by Messrs. Briggs & Wolstenholme, Hobbs and Arnold Thornely, who were recently successful in the competition for the great Liverpool Dock offices. In their design the buildings form a hollow rectangle, with the central area bisected by the central hall (under which is the dining-room). The buildings fronting Church-road consist in the main of one story and a basement, with the chapel at the extreme left, the gymnasium and swimming-bath at the extreme right, and the principal entrance and clock tower in the centre. The principal entrance is

on the first or upper ground floor, and leads into a hall about 17 ft. square, above which rises the tower. A corridor 14 ft. wide leads directly from the entrance hall to the east end of the central hall, which is on the same level, and measures 76 ft. by 47 ft. exclusive of crush lobby and platform. The platform is at the west end of the hall and on each side of it a wide flight of eleven steps leads down to the level of the first or upper ground-floor corridors in the west block. Opposite these stairs are the two staircases (for girls and boys respectively) leading down to the lower ground floor and up to the second floor of the west block fronting Prince Alfred-road. This block is three stories high, and contains on the lower ground floor the four classrooms for girls and the boys' recreation-rooms; over the girls' classrooms are the matron's and headmaster's rooms, sewing-room, &c., on the first floor, and one of the girls' dormitories on the second floor. Over the boys' recreation-room are two stories of boys' dormitories. The girls' recreation-rooms are on the lower ground floor in the south range of buildings, and girls' dormitories and other rooms are placed on the floors above. The six boys' classrooms are on the lower ground floor in the north range, but overlooking the "male staff quadrangle" so as to have a south aspect. This quadrangle measures 169 ft. by 96 ft., and is therefore of ample size. The corresponding quadrangle on the opposite side of the central hall is divided into two unequal parts by a one-story range of buildings (parallel with the two principal fronts), the larger part forming the female staff quadrangle and the smaller the kitchen court, from which access is obtained to the kitchen department, a one-story block between the dining-room and the basement under the principal entrance.

The block fronting Church-road has a corridor 9 ft. wide running from the chapel on the left to the galleries of the gymnasium and swimming-bath on the right. The frontage is occupied towards the left of the entrance by the boardroom, medical examination-rooms, applicants' ante-room, girls' and applicants' entrance, and the chapel; and towards the right of the entrance by the office, ladies' committee-room, boys' entrance, gymnasium, and swimming-bath. The two portions are not symmetrical and the effect will be less satisfactory in perspective than in elevation.

The sanatorium is a detached two-storied building fronting Church-road, to the north of the swimming-bath. It is well planned and is raised on a terrace behind which is the playing-field. This is only two acres in extent, but can easily be increased by omitting an unnecessary cloister which runs from east to west at a distance of about 36 ft. from the north front of the main buildings.

The chapel is a circular building, with four projecting arms, forming a cross. The north arm forms the entrance, the south is occupied by the organ, and galleries are placed in the two transepts. The central area is covered by a low dome, and the building is well designed both for internal and external effect. A flight of stairs close to one corner of the chapel leads down to the lower ground floor, near the girls recreation rooms, and the approach for the boys is along the main corridor on the upper ground floor, so that the boys and girls cannot meet till they reach the vestibule of the chapel. This is a point which has been overlooked by some of the other competitors. Speaking generally, the planning of this design is admirable. The architectural treatment of the chapel and tower is also excellent, but more character might, with advantage, be given to the Prince Alfred-road front. Both as regards plan and style it is undoubtedly the best of the four designs.

Design No. 1, by Messrs. Woolfall & Eccles, has the principal entrance in Prince Alfred-road, the main block being set back so that the sanatorium and chapel can be placed in front of it. The dining-room is in the middle of the main building and on the same level as the entrance, and is approached through an inner hall and corridor. The kitchen department is in the rear of the dining-room, and is connected to it by a service corridor. The boardroom, office, &c., are near the principal entrance. The girls' and boys' schools form on the ground floor two complete quadrangles to the north and south respectively of the central block, and are connected with it by a corridor running right and left from the back of the inner hall. The ground floors of the schools are ten steps above the dining-room, principal entrance and administrative rooms; this arrangement, while giving the necessary increase of height to the dining-room, allows the first floor, including the central hall over the dining-room, to be on one level. The two quadrangles are of large size and are used as playgrounds, and covered playgrounds are shown on the sides forming the ends of the whole group. The gymnasium is placed over the boys' covered playground, and is therefore as far from the girls' school as possible; this is surely one of the rooms which ought to have been conveniently accessible from both schools. The swimming-bath is also too far from the girls' school. In both schools the classrooms are on the east side of the quadrangles, and therefore in the Church-road front, and the recreation-rooms on the west side, and therefore in the Prince Alfred-road front; the lavatories and wardrobes are on the sides nearest the central block. The classrooms are rather too far from the recreation-rooms.

There are many good points about the planning of the main buildings. The arrangement of the rooms on the two sides of the central block is practically symmetrical, and the general grouping of the rooms can be easily grasped, but the buildings are lacking in compactness. The sanatorium is the most unsatisfactory feature. It is placed in the north-west corner with one end towards Prince Alfred-road, and has two wings (in which the conveniences are placed) projecting northwards from the rear; the administrative block is wedged between the wings, leaving a space of only 13 ft. at each end of the block and of only 10 ft. between the block and the sanatorium itself. The principal frontage of the administrative building is towards the north, so that altogether this building would be very dreary, and would also render the sanatorium far from satisfactory. The playing-field is L-shaped, and therefore contrary to the instructions. On the whole, however, the planning is good and next in merit to that of the selected design.

The external treatment is somewhat bald and uninteresting. The upper dormitories are lighted on the fronts by circular windows 3 ft. 6 in. in diameter, and the effect would have been greatly improved if the main cornice had been placed below those windows. At the same time it must be confessed that such windows are, for sanitary reasons, unsuitable for dormitories. The Church-road frontage is not satisfactory, and would be still worse if the swimming-bath were erected in the position shown.

Messrs. Grayson & Ould, in design No. 5, have sacrificed too much for the sake of the Prince Alfred-road frontage. If the details had been as good as the general conception, this frontage would have been the best submitted. As already stated, the authors have taken their cue from the existing hospital, and have arranged the front portion of the buildings around three sides of a large forecourt. The dining-room and the central hall over it are placed lengthways to form a central projection in the recessed portion. At each corner of the projection there is a large bay, rather more than semi-octagonal in plan, rising nearly to the main cornice. This central feature is perhaps the best part of the design, although the flat roofs of the bays are far from happy. The girls' school is in the north part of the recessed portion and in the north wing, and the boys' school in the south. An ornamental garden extends from the road to the dining-room, and access to the garden is obtained by a door (without vestibule or porch) in the centre of the dining-room front and a flight of ten steps. The playgrounds are to the right and left of the garden.

The principal entrance, if such it can be called, is in the Church-road front, and from it access is obtained to the central hall over the dining-room by means of a corridor about 140 ft. long and for the most part 6 ft. wide, in which occur three flights of stairs, having seven, five, and four steps respectively. This alone is sufficient to throw the design out of court, but it is not by any means the only defect. To reach the chapel without leaving the building, the girls must go through the dining-room (or along the service corridor), and then along the boys' corridor, past two boys' recreation-rooms, boys' lavatory, three boys' classrooms, and the boys' workshop. To reach the gymnasium and swimming-bath, both boys and girls must apparently travel along the service corridor past the kitchen and pantry doors. The dormitories have three rows of beds. The sanatorium is badly designed, the very elements of hospital planning being ignored.

The arrangement of the Prince Alfred-road frontage was undoubtedly a happy idea, but unfortunately it has been allowed to spoil the other parts of the building.

Messrs. Richard Holt and J. B. Hikins have undoubtedly produced a striking design (No. 9). Both the main frontages have been duly considered, and both would be effective, although the architectural details are chiefly either crude or commonplace. The authors certainly have eyes for planning a large building like this in a monumental way. The principal elevation is towards Prince Alfred-road, and has a forecourt in the middle; a lodge is placed in the middle of the front of the forecourt, and is connected to each wing portion of the building by a colonnade. At the back of the forecourt three entrances lead into a corridor or loggia, behind which the dining-room is placed. The Church-road frontage has the chapel for central feature, and around this an elaborate semi-oval drive and cloister leads (alas! that we should have to say it) to the kitchen vanyard. This grand entrance is at the vertex of the curve; the girls' and boys' entrances are on either hand. Beyond the north cloister entrance is the administrative block of the sanatorium, and this is balanced on the south by the boardroom and office building.

The general planning is, however, less satisfactory. In addition to the forecourt there are two quadrangles used as playgrounds, four smaller courts, and three areas for light. The corridors are not well designed. The different parts of the main building are fairly connected on the lower ground floor (to a great extent by cloisters), but on the upper ground floor there are practically ten disconnected buildings in addition to the tower. This renders it necessary to provide a great number of staircases. On the upper ground floor plan we counted twenty flights, besides emergency stairs. The classrooms are on the upper ground floor, as are some of the dormitories, while the recreation-rooms are on the floor below. It would be an exceedingly difficult task for the masters to supervise such a building and for the servants to attend to it. The dormitories have three rows of beds, and some of the recreation-rooms are L-shaped. Only one lodge is provided, and the central hall is rather too small. To get over the difficulty of placing a single gymnasium in a convenient position for both boys and girls, the authors have provided one for each sex. The instructions, therefore, have not been completely carried out.

As regards cost, this design would undoubtedly be the most expensive and would certainly exceed the stipulated sum. Messrs. Grayson & Ould's design would be the cheapest, while the selected design would probably come next. In conclusion, we may state that the order of merit of the unsuccessful designs has not been given to the public. Perhaps, as the premiums are equal, the assessor did not consider it necessary to state his opinion as to their relative merits.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE following have passed in the Royal Institute of British Architects June examinations:—

Preliminary.

W. H. Bagot, Aldgate, South Australia; A. F. Benjamin, London; P. U. Billings, Sale; S. Birkett, West Didsbury, Manchester; A. Booth, Barnsley; H. L. Bown, Harrogate; A. G. Bray, Bolton; T. H. Brook, Holmfirth, near Huddersfield; F. H. Bulmer, Woolwich; J. H. R. Burbage, Southampton; M. J. Burke, Dolphin's Barn, Dublin; H. Cartwright, East Finchley; A. Chamberlain, Newcastle-on-Tyne; J. H. Chaundler, Eastbourne; R. H. Cheatle, Burford, Oxon; H. Clay, Gainsborough; W. Clifford-Smith, Poole; W. Clissold, Edgehill, Minchinhampton; G. B. Cobbett, Addlestone; A. F. Collins, Windsor; C. S. Cooper, Gainsborough; H. R. Crabb, Exeter; N. Culley, Huddersfield; R. B. Curwen, South Woodford; J. L. S. Dahl, Liverpool; G. V. Davidson, Paisley; V. A. G. Day, Old Aberdeen; N. A. Dick, Edinburgh; H. E Dicks, Cheltenham; E. J. Dod, Birkdale, Southport; R. Donnelly, Holywood, co. Down;

H. B. Downs, Guiseley ; A. McLachlan Duncan, Perth ; C. C. Durston, Weston-super-Mare ; C. W. Eaton, Leicester ; S. A. Edwards, Manor Park, Essex ; T. M. Ellis, Hull ; L. S. Fifoot, Penarth, Cardiff ; G. McL. Gibson, Hornsea ; C. L. Gill, London ; J. H. Gott, Margate ; G. H. B. Gould, Ipswich ; R. F. Gutteridge, Southampton ; G. I. Gwynne, Boscombe, Hants ; S. A. Hall, Muswell Hill, N. ; J. T. Halliday, Stonehouse, Plymouth ; F. J. W. Hart, Brondesbury, N.W. ; R. E. Hastewell, Haltwhistle ; F. R. Hedges, Wisbech ; H. W. Higson, Smithills, Bolton ; S. W. Hill, London ; H. D. Hird, Halifax ; W. A. Hodges, Wimbledon Park ; H. D. Holland, Pemberton, near Wigan ; A. P. Holmfeldt, Hull ; H. G. Holt, Bolton ; R. M. F. Huddart, Bayswater ; R. C. Hunter, Edinburgh ; W. S. Iron, Clapton, N.E. ; W. Jackson, Hitchin ; S. Jaques, Stratford, E. ; D. S. Jennings, Hammersmith ; W. H. Johnson, Great Yarmouth ; F. H. Jones, Leicester ; P. C. Jones, Leicester ; W. J. Joynes, Bristol ; T. Rosenheim Kerr, Inverness ; H. P. Keys, Wood Green, N. ; T. W. F. Körner, Sunderland ; A. P. Lambert, Brixton, S.W. ; C. S. Langham, Leicester ; A. H. Le Gassie, Plympton ; H. R. Linnell, Leyton ; J. W. Lloyd, Taunton ; A. G. Lynham, Bristol ; D. A. Macdonald, Muir of Ord, Ross-shire ; A. C. Mac George, Westbourne Park, W. ; A. L. Macmillan, Southport ; E. J. Mac Rae, Edinburgh ; F. Marshall, Stockport ; J. Matley, Oldham, D. Mitchell, London ; J. Mitchell, Edinburgh ; W. H. Mitchell, Sale, Manchester ; G. Morland, Croydon ; H. S. Morran, Plumstead, Kent ; G. C. Murray, Stoke, Devonport ; R. H. Murray, Norbury ; P. G. Newton, Kingstown, co. Dublin ; J. H. Noël, Wakefield ; V. J. O'Connell, Dublin ; W. Paice, jun., Egham ; E. W. Pearson, Bradford ; E. S. Petch, Wakefield ; R. A. H. Phipp, Rowde, Devizes ; C. R. Pinsent, London ; R. R. Prentice, London ; E. L. Pryor, London ; A. Pursglove, Heaton Moor, near Stockport ; H. T. Rainger, Cheltenham ; J. B. T. Reid, Dalmarnock, Glasgow ; A. Rigby, Manchester ; K. D. S. Robinson, London ; C. K. Roe, London ; P. J. Rowe, Marlow-on-Thames ; F. S. M. Saunders, London ; A. T. Scrivener, Endon, Stoke-on-Trent ; J. Smith, Alnwick ; W. J. Smith, Richmond ; A. L. Snow, Chislehurst ; W. J. Stenner, Bristol ; A. W. Street, Birkenhead ; A. D. Sturgess, London ; C. N. Taylor, Prestwich Park, near Manchester ; C.S.Thomas, Forestpach, Swansea ; H. Thomas, Swansea ; P. E. Thomas, Penarth ; J. O. Thompson, Poppleton, near York ; R. W. Thorp, Headingley, near Leeds ; C. Thunder, London ; W. I. Travers, London ; C. A. S. Vardy, Maidenhead ; N. Vaux, Sydenham ; E. A. J. A. Vincent, Chertsey ; A. Wagstaff, Glasgow ; E. G. Walker, Upper Norwood, S.E. ; F. H. Walker, Windermere ; W. B. Walton, Blackpool ; F. H. Webster, Norwich ; J. G. West, Cardiff ; E. L. Wilson, Southport ; G. A. Wood, Girlington, Bradford ; R. S. Woodcock, Aldeburgh-on-Sea ; E. L. Wren, Leicester.

Intermediate.

The following have passed the Intermediate Examination, the names being given in order of merit as placed by the Board of Examiners :—P. B. Dannatt ; J. S. Brocklesby ; Baxter Greig ; E. G. H. Gunn ; A. G. Maitland, Tain, N.B. ; W. Greenwood, Blackburn ; J. H. Belfrage ; R. T. Longden, Burslem ; E. P. Archer ; Edgar Quiggin, Liverpool ; Herbert Ryle, Newcastle-on-Tyne ; C. F. Callow, St. Leonard's-on-Sea ; Herbert Black ; T. F. Amery, Sheffield ; W. E. A. Brown ; J. A. Fletcher, Leicester ; W. J. Delbridge ; Sydney Bridges ; H. P. Gordon ; H. E. Rider ; G. E. Elkington ; Richard Wylie, Gateshead ; G. M. Page, Lincoln ; H. M. Pritchard, Cardiff ; J. O. Raymond, Tring ; G. S. Salomons, Manchester ; Jordan Green, Birmingham ; F. G. Newton ; F. J. Toop, Lincoln ; W. E. Brooks ; H. Dru Drury ; E. H. Walker ; F. J. Lucas ; R. J. Archibald, York ; A. F. Warth, Birmingham ; W. P. Watson, Coventry ; J. A. Hossack, Banff, N.B. ; A. N. Campbell ; Joseph Boyle, Bolton ; H. F. Buckley, Halifax ; F. J. A. Corfield ; Bertram Drummond, Fleetwood ; E. F. M. Elms ; F. J. Forster, Darlington ; E. T. Goff, Lowestoft ; L. A. Loades, Morpeth ; H. J. Mauchip, Bristol ; Stanley Salisbury, Harpenden ; J. H. Shearer, Exeter ; W. H. Watkins, Bristol.

The Final.

The following have passed the Final Examination, qualifying for Associate R.I.B.A. :—

John Percival Bishop, London ; W. Mackereth Dean, Gravesend ; Lionel Gordon Detmar, London ; Leonard W. Ensor, Huddersfield ; C. H. Gage, London ; Leolin C. Gregory, London ; John Percy Hall, London ; Sidney Joseph Halse, London ; Alex. G. R. Mackenzie, Aberdeen ; Clement Stretton, Leicester ; Edgar John Pullar, London ; Raymond Cyril Wrinch, Ipswich ; F. Dare Clapham, London ; W. Bruce Dawson, London ; Ernest Godfrey Page, London ; Cyril E. Power, London ; T. Wilson Aldwinckle, London ; C. H. E. Bridgen, London ; Dean John Brundrit, Cheshire ; H. Cayley, Cambridge ; H. D. Day, Godalming ; T. Norman Dinwiddy, Greenwich ; K. Gammell, London ; G. R. C. Harding, London ; C. Llewellyn Hall, Lancashire ; Abraham Holstead, Alnwick ; E. Vincent King, South Shields ; Arthur Pickup, Blackburn ; Louis E. Pryke, Surbiton ; Arthur Henry Roe, London ; R. Bertie Rowell, London ; John G. Walker, Wakefield.

THE ARCHITECTURAL ASSOCIATION.

THE Architectural Association Travelling Studentship has been awarded to Mr. J. E. Forbes ; Mr. L. G. Detmar receiving the second prize, value 5*l*.

The work executed in the School of Design and the Studio during the past Session will be exhibited at 56, Great Marlborough-street, W., from August 1 to August 10 (inclusive) between the hours of 9 30 a.m. and 7 p.m. (Saturdays, 1 p.m.).

So many members and non-members have, during the past few months, applied to the Secretary requesting his assistance in obtaining introductions to others desirous of sharing or letting offices, requiring pupils, partnerships, mutual assistance in return for share of offices, &c., that it became necessary for the Committee to consider the advisability of making a charge for these special services. The Committee has therefore resolved to establish a new Register for such purposes, for which a fee of 10s. 6d. and 21s. will in future be charged to members and non-members respectively.

The alterations which have been in progress for some time at 56, Great Marlborough-street, are completed, and the new common room is now open to members. The alterations have been carried out by Messrs. Shuffrey & Co., under the supervision of the President. The common room, office, and library will now be lighted by electric light.

The late President, Mr. George H. Fellowes Prynne, has consented to carry on his editorship of the "Association Notes" for another year. Mr. Satchell is the sub-editor.

The annual excursion will take place this year from July 22 to 27, and hotel accommodation having been found, the headquarters are now fixed at Cirencester. Most of the visits are now arranged, and include the following :—Northleach, Stowell Park, Chedworth, with its Roman Villa and Museum, Edgeworth Manor, Wishanger Manor, Lypiatt Park, Doughton, Malmesbury Abbey and Town, Charlton Park, Beverstone Castle, Chavenage, Tetbury Town, with its quaint Market Hall and old houses, Bibury Court, Ablington Manor, and other places in the vicinity. Intending excursionists should send in their names to either of the hon. secs., Mr. W. Talbot Brown, The Square, Wellingborough ; or Mr. A. W. Hennings, 9, Ely-place, E.C.

COMPETITIONS.

SCHOOLS, ALDERSHOT.—The First Premiated Design in this competition was sent in by Messrs. Coggin & Wallis, 15, York-buildings, Adelphi.

QUARRYOWNERS' ASSOCIATION. — The annual general meeting of the United Kingdom Granite and Whinstone Quarryowners' Association has just been held in Aberdeen, under the presidency of Mr. A. F. Manuelle, of London, Leicester, Guernsey, and Aberdeen. The accounts for the year showed a very favourable balance. Mr. Manuelle was re-elected President, and Mr. John Fyfe, quarryowner, Kemnay, &c., as vice-president. After lunch in the Imperial Hotel, Rubislaw Quarries, the Aberdeen Granite Works (Constitution-street), the new electric tramway to the Links, and the Corporation's sea-bathing station were visited and inspected with interest. On the second day the members had an excursion to Balmoral Castle, and dined together in the Invercauld Arms Hotel, Ballater, those from a distance leaving Aberdeen next morning for their homes.

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

THE annual meeting of the members of the Association of Municipal and County Engineers was held in the Council Chamber of the Town Hall, Leicester, on Thursday, June 27. Mr. E. G. Mawbey, President, occupied the chair, and among those present were Messrs. C. H. Lowe, Hampstead ; J. P. Barber, Islington ; W. Weaver, Kensington ; W. N. Blair, St. Pancras ; J. M. Knight, Mile End ; J. P. Norrington, Westminster ; O. E. Winter, Poplar ; J. E. Willcox, Birmingham ; J. Price, Birmingham ; J. T. Eayes, Birmingham ; J. Lobley, Hanley ; J. Lemon, Southampton ; F. J. C. May, Brighton ; E. R. S. Escott, Halifax ; A. M. Fowler, Westminster ; A. E. Collins, Norwich ; A. Creer, York ; A. T. Davis, Shrewsbury ; A. D. Greatorex, West Bromwich ; E. P. Hooley, Nottingham ; J. Paton, Plymouth ; S. S. Platt, Rochdale ; C. F. Wike, Sheffield ; R. J. Thomas, Aylesbury ; J. S. Pickering, Nuneaton ; J. Hall, Cheltenham ; T. Cole (Secretary), Westminster ; and others.

The inaugural address of the President (Mr. E. G. Mawbey) appeared in our issue of last week. In continuation of the report of the proceedings,

Mr. W. Howard Smith, Assoc.M.Inst.C.E., Westminster, read a paper on "Permanent Way for Electric Tramways." He contended that a well-designed track which was the outcome of practical experience would probably have a life double or treble that of one badly conceived. Each year added to the life meant not only a saving of the proportion of capital cost and interest thereon, but also the postponement of the inevitable loss of revenue during reconstruction ; every possible means should therefore be taken, at reasonable expense, to ensure that the permanent way should be perfect in design and construction, and its standard of stability of the highest. Though the experience in this country of the wearing effect of electric traction on tramways had been comparatively short, it had been sufficient conclusively to demonstrate that it was much more exacting in its demands for perfection of permanent way than was found necessary under horse, cable, or steam traction. This was primarily due to heavier cars being run at much faster speeds and with much greater frequency. A loaded electric car weighed from 10 to 12 tons as against 3 to 4 tons for a horse or cable car, while the maximum speed was generally fixed at eight miles per hour on urban and suburban roads, and fifteen miles per hour on inter-urban lines.

Mr. A. D. Greatorex, West Bromwich, moved a vote of thanks to the author of the paper.

Mr. A. H. Campbell, East Ham, suggested that the Association should endeavour to obtain a practical result by being represented before the Standards Committee as to the adoption of a standard rail. If a standard rail could be adopted in this country, it would prove of great economy in tramway construction.

Mr. S. S. Platt, Rochdale, referring to the absence of fishplates on the Blackpool tramways, said he did not know whether that had had anything to do with the trouble met with there. He would certainly hesitate to dispense with fishplates.

Mr. Blair, St. Pancras, condemned the use of chilled iron blocks to prevent rutting by the side of the tram track. These blocks wore at a less rapid rate than either wood or granite, and gave out a continuous clatter, so much so that the Tramways Committee in his district called upon the Tramways Company to withdraw them.

After some further discussion, the vote of thanks was accorded, and Mr. Howard Smith briefly replied to questions put by the various speakers.

Mr. E. Manville, London, then read a paper on "Methods of Safety for the Overhead Electric Trolley System." He said it was most important that the overhead trolley system, when installed, should be of such solid construction and excellence of design that with a comparatively limited amount of inspection there should be the smallest possible liability to breakage of the "live" conductors, or of parts carrying these, and of the entanglement of the trolley wheel with the "live" conductor, the guard wires, and their fittings. It was originally the custom to use 1/0 B. & S. trolley wire of hard copper, but the numerous accidents occurring from the use of so small a wire had gradually caused the

introduction of larger sizes of trolley wire having a higher breaking strength. In other respects the installations had been strengthened with a view to eliminating as far as possible the chances of accident.

Mr. J. Lemon, Southampton, moved a vote of thanks to the author of the paper.

Mr. J. Lobley, Hanley, who seconded, remarked upon the unanimity with which the overhead system was now accepted in this country.

Mr. Gammage, Dudley, said though the public of his borough were up in arms against the overhead system when it was proposed, since it had been working there had not been a single accident and the public were quite satisfied.

Mr. Manville, in reply, said he did not think there was any difference in the way of safety between the span-wire and bracket systems; both were equally safe, but the span-wire system was the best in working because it formed the easiest passage for the trolley wheel to pass over.

Mr. W. Worby Beaumont, M.Inst.C.E., London, then read a paper on "The Wear of Roads by Horse Haulage and Motor Traffic." He urged that good roads and ample means of easy and quick transport upon them were among the first of all necessities. To gain anything like a true knowledge of the effect of the average bad road surface in the destruction of vehicles, it was only necessary to take a run in a light motor carriage with 30-in. wheels and solid rubber tyres at twelve miles an hour. It might be just possible to retain one's dental integrity at that speed, but at anything like a sufficient speed to avoid a charge of wasting time on the road it would be necessary to have spine and teeth of indiarubber. A motor carriage made an excellent road inspector. It experienced all the badness, and said nothing. They must have better roads for the high speeds that modern lines demanded; more men and more money at the disposal of engineers and surveyors. Considering the lighter class of motor vehicles, such as those which carried from one to two tons, at speeds which meet modern requirements, it might be confidently expected that the wear of the roads by them would be from 20 to 40 per cent. less than by horse-hauled vehicles, and that it would, therefore, pay to spend more money at first in following out the best possible construction, and afterwards in maintaining a trained body of repairers constantly at work, so that these vehicles might be profitably used.

Mr. R. J. Thomas, Aylesbury, who proposed a vote of thanks to the author, contested what he described as the prevailing impression that nothing had been done to improve the roads.

Mr. McBair, Lincoln, who seconded, considered that rubber-tyred motor cycles had the effect of disintegrating macadam roads, and he would be very glad to see them taken off the roads altogether.

Mr. Norrington, Westminster, contended that in London wood paving was allowed to go for years without any repair, and then the whole road had to be taken up and relaid.

Mr. E. P. Hooley, Nottingham, said he had never heard a more ridiculous statement than that the Local Authorities cut down their expenditure on the roads without consideration of the condition of the roads.

Mr. J. P. Barber, Islington, said they were unable in many cases to get men to repair their roads with skill and intelligence. He had the greatest difficulty in selecting six men from 200 who could spread a single load of broken stone efficiently and economically. They seemed to get men in London who had failed at nearly everything else, and who thought all they had to do was to help the surveyor to do his work. He hoped Mr. Beaumont would not go away thinking there was no one there who did not lament the decadence of the skill and intelligence of the workman.

Mr. Paton, Plymouth, considered that the bad condition of macadam roads in London was due to indiarubber-tyred vehicles, which tended to disintegrate macadam. The roads were in better condition than ever before.

The vote of thanks having been passed,

Mr. Beaumont, in reply, said if ever it was known how to make a road, and to maintain it, it was to-day; but it required men and money to carry out their knowledge, and that was what they had not got for 60 per cent. of the whole of the roads of the country.

Mr. T. H. Yabbicom, C.E., Bristol, read a paper entitled "Notes of Experiments made on the Purification of Sewage by means of Stoddart's Improved Sewage Filter at Knowle, Bristol." He explained that the sewage was dealt with in a covered tank and a filter having a depth of 6 ft. made of rough clinkers of not less than $2\frac{1}{2}$ in. gauge. The tank effluent was distributed over the surface of the clinker by a contrivance invented by Mr. Stoddart, which was described by the inventor as follows:—

"The distributor consists of a number of narrow gutters arranged at right angles to the supply channel, and resting upon its margin and upon suitable support at the distant end. Each section of the distributor abuts against a casting embedded in the margin of the supply channel, so arranged that the tank effluent, on flowing over the margins of the channels, passes into the gutters of the distributor. Along the lowest part of the under surface of each gutter is placed a series of vertical points.

The sewage or tank effluent, entering the gutters by way of the supply channel, flows over the margins, and on reaching the under surface, falls from each of the vertical points in a series of fine drops.

It will be seen that there are no fine perforations to become clogged, and that the action of the distributor does not in the least depend upon the subdivision of the sewage by fine apertures or tubes, but that there is a perfectly free passage for the sewage from the supply channel to the filter itself. There are also no moving parts, or indeed anything that by any stretch of the imagination can be considered likely to get out of order."

Mr. Lacey, Oswestry, moved a vote of thanks to the author for his paper.

Mr. W. J. Dibdin, London, said he did not wish to speak in criticism, but the filter appeared to him to all intents and purposes to be absolutely identical with Colonel Ducat's filter. Colonel Ducat had a bed of filtering material 10 ft. deep, and he had a number of methods of distributing the sewage on to the bed by perforated pipes, V-shaped troughs, and so on, and wherein this constituted a difference from Colonel Ducat's method he would like to have explained. The results obtained by the Stoddart method seemed to have been good, but not remarkable.

Mr. Yabbicom, in reply, said he was not there as an advocate, but Mr. Dibdin could not expect him to give Mr. Stoddart away by admitting that this filter was precisely the same as any other filter.

The meeting then became special to consider proposed alterations in the by-laws of the Association, which were considered in private.

In the evening the annual dinner of the Association was held in the Mayor's room at the museum, the President (Mr. Mawbey) presiding over a large company.

The proceedings of the annual meeting were resumed in the Council Chamber of the Town Hall on Friday, June 28, Mr. Mawbey in the chair.

A paper on rifle ranges by Mr. J. W. Bradley, City Engineer of Westminster, in the absence of the author, was taken as read.

Mr. E. P. Hooley, Nottingham, proposed a vote of thanks to Mr. Bradley for his paper, though he thought it more a matter for the consideration of the House of Commons than for that Association.

Mr. A. D. Greatorex, West Bromwich, seconded the vote of thanks.

Mr. W. J. Dibdin, London, suggested that landowners might assist in this matter by giving permission to Volunteers to shoot over their land.

Mr. F. W. Mager, Walsall, read a paper on "The Liabilities of Local Authorities under 38 & 39 Vict., cap. 55, sec. 24."

On the proposition of Mr. A. Collins, a hearty vote of thanks was accorded to the author for his paper.

The members then proceeded in brakes to visit the Nedham-street refuse destructor and the West Humberstone destructor and steam-raising plant, after which they proceeded in a special train to Loughborough to inspect the extensive Falcon Works of the Brush Electrical Engineering Company, Limited. The whole of the workshops were thrown open to the inspection of the members, who, before leaving, were entertained to luncheon by the company. The remainder of the day was devoted to visits to Messrs. J. Ellis & Sons, Limited, Portland Cement Works, the Mountsorrel Granite Quarries, and the Groby Granite Quarries, and Patent Victoria Stone Works.

The proceedings of Saturday, June 29, were devoted to a motor-car journey, on cars kindly provided by the members of the Automobile Club of Great Britain and Ireland, and its Nottingham and Midland branches, to visit the various improvements in the Borough of Leicester, the Beaumont Leys Sewage Farm and Experimental Works, the Enderby and Stoney Stanton Granite Company's quarries, where luncheon was provided, and the Croft Granite Company's Works. The journey was a most enjoyable one, beside affording a very severe test of the travelling capacity of the cars, an ordeal which they came through very successfully. The complete enjoyment of the day was marred by an accident, which occurred late in the afternoon to one of the cars, and by which two members of the Association received slight injuries. Apart from this the meeting was one of the most successful in the annals of the Association.

GLASGOW ROYAL INFIRMARY RECONSTRUCTION SCHEME.

THE Glasgow Institute of Architects have written and circulated the following letter addressed to the Executive of Contributors to the Infirmary Reconstruction Scheme:—

"115, St. Vincent-street,
Glasgow, June 25, 1901.

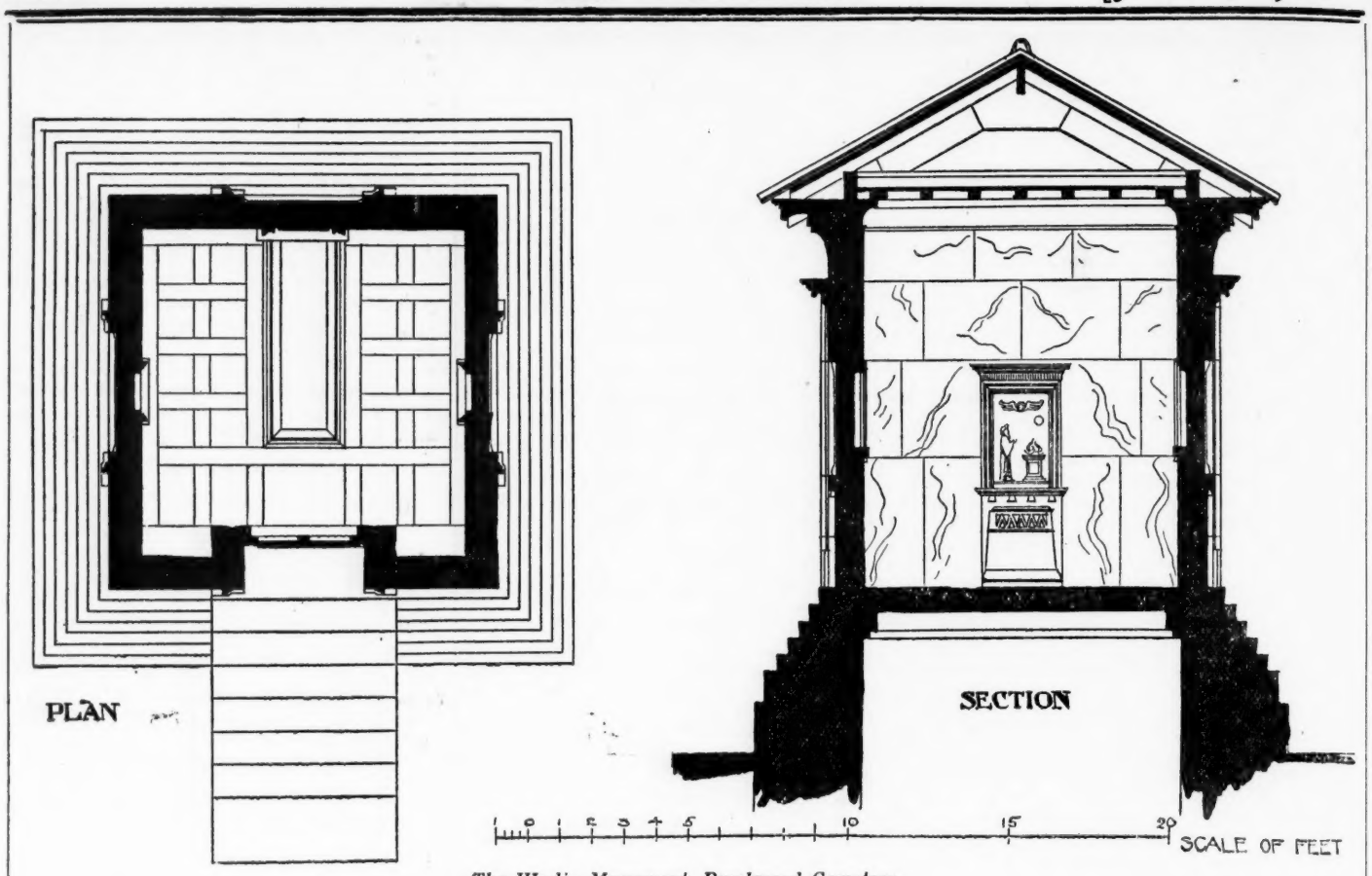
To the Executive Committee of the Contributors to the Royal Infirmary Reconstruction Scheme.

GENTLEMEN,—I duly received your letter of 18th ult., which has already been acknowledged, and I am instructed to state that the Glasgow Institute of Architects regrets that no more explicit reply has been vouchsafed to its protest and appeal, by the Managers and the Executive, than what is contained in the official statement issued to the public. Nothing in that statement in any way answers or refutes the objections previously raised by the Institute. The statement, indeed, rather confirms them; and the Institute therefore remains of the opinion that the plans as adopted 'are in many vital particulars inadequate and out of date;' that their distribution on the site, particularly with regard to the 'Jubilee Block,' facing Cathedral-square, is bad; and that in consequence, if the reconstruction is proceeded with according to those plans, 'the infirmary will not conform to the most modern standards of design in this class of building.'

The criticisms of the Institute on the previous occasion were chiefly concerned with (1) the manner in which the competition was conducted, according to which solutions of the problem other than those put forward by the Managers did not receive unbiassed and adequate consideration; and (2) the insistence on the Jubilee Block as an integral part of the scheme. Such a block the Institute considered to be objectionable, because (*a*) it would shut out from the rest of the buildings the sun and air from the southern and most open part of the surrounding area, and (*b*) it would dwarf and irretrievably injure the external appearance of the cathedral.

With regard to the first of these two points, while the Managers in their letter refer to the block-plans which they had prepared with much time and labour as being 'suggestive and illustrative only,' and this is repeated in the statement and appeal of the Executive, one learns also from this latter that 'when the final selection was made the Executive Committee fixed on a plan which the assessor reported as being one of two which most closely conformed to the sketch-plans'—*i.e.*, those drawn up by the Managers. As further reason for the adoption of this particular plan the Executive give a list of special characteristics in respect to internal arrangements which they consider to be essential or desirable features; yet these were all contained in other designs submitted, which were at the same time free from the radical defects referred to.

As to the Jubilee Block, the Managers now state as their sixth conclusion:—'That the new hospital, and not a section of it, should be regarded as alone worthy of the City of Glasgow, and as a fitting memorial to the sixty-three years' illustrious reign of the Queen.' This is exactly the position adopted by several of the competitors and by the Institute, while objecting, from practical reasons already stated, to its inclusion as part of the scheme. With reference to the cathedral, it is, therefore, quite beside the point for the Executive to state that 'the buildings must be lofty if the hospital requirements of the public are to be adequately met,' for, while the buildings must be lofty, on other portions of the site (if that site is to be retained) there is no necessity for their being lofty in the direct alignment with the cathedral, nor, indeed, for there being any buildings at this point at all, as was shown in one or more of the plans submitted. The Institute does not admit that the injury to the cathedral is a question of architectural style; it is one of comparative height and scale. As regards these, the plan adopted is especially objectionable in that not only is the block itself seven stories high, but it has in addition a lofty spire which would further and quite unnecessarily



The Wadia Monument, Brookwood Cemetery.

assist to dominate and destroy the effect of the cathedral.

The Institute of Architects feel it to be their duty, in the interests of the public (for whom they speak as a body of technical experts in such matters), to thus repeat and emphasise their protest, and to again most earnestly urge the Executive, before committing themselves and the public to the erection of any portion of the building, as designed, to have the plans submitted to one or more independent hospital authorities of recognised and outstanding position for consideration and report. Further, should the Executive object to the outlay involved in such a course, the Institute would be prepared to arrange for it and to meet the cost provided the Report did not bear out their contention, while submitting beforehand the name or names of the experts proposed, on obtaining the necessary facilities from the Executive.—Yours truly, C. J. MACLEAN, Secretary."

Illustrations.

PULPIT, SAN MINIATO, FLORENCE.

THE pulpit and the screen that supports it on one side are beautiful examples of Romanesque workmanship in inlaid marble. The devices of men and winged monsters on the screen, and the short squat figure with the eagle supporting the lectern, add a touch of quaintness to the design.

The whole is in a fair state of preservation, nothing being damaged but the capitals of the slender columns and the mouldings here and there. The rude way in which the pulpit butts into the columns of the choir suggests that it was not originally intended for its present position, but of this there is no certainty.

The drawing was made entirely upon the spot. W. CURTIS GREEN.

THE WADIA MONUMENT, BROOKWOOD.

THE Wadia Monument has been erected at Brookwood, on the land used as the Parsee burying place, as the tomb of Mr. N. N. Wadia, a Persian gentleman who lived in Bombay as a subject of the Indian Empire, but who died in England. The tomb is the design of Mr. T. E. Collcutt.

It is built of Portland stone, the roof being covered with blue ribbed glazed tiles. The door is of teak covered with plates of bronze, and bronze panels with inscriptions are set into the recesses on each side of the building. The interior is lined with a dado of Verona marble, the upper part of the walls being covered with alabaster. The ceiling is divided by teak beams, which are gilded, the panels being coloured a pale blue.

The sarcophagus is constructed of alabaster inlaid with red and green marbles and lapis lazuli, the top having a band of carving in low relief, with the crest of the late Mr. Wadia—a separate panel.

The ruins of the tomb of Cyrus at Passargardæ, illustrated in the volume on Persian art, by Messrs. Perrot and Chipiez, have been followed so far as the general outline of the building would admit.

The beautifully worded inscriptions on the outside of the building were composed by Sir George Birdwood, and can be read on the reproductions in our plate, from photographs taken from the bronze plates before fixing. The lithograph shows a view of the tomb, from a perspective sketch lent by the architect. The plan and section are given in the text.

RAYNHAM HALL, NORFOLK.

THE two detail elevations of this house, the design of which is attributed, with every probability, to Inigo Jones, are reduced reproductions of two plates in Mr. Triggs' and Mr. Tanner's new illustrative volume of "Some Architectural Works of Inigo Jones," to which more special reference is made in the first article in this issue.

MAP OF THE PARISH OF ST. GEORGE, HANOVER-SQUARE.

THIS, as stated on the title of the plate, is a reduction from an old map in the possession of St. George's Vestry, and is given in connexion with the article published in this issue on the Grosvenor Estate, Pimlico, &c., and shows the state of the district as it still existed, for the most part, at the commencement of the nineteenth century.

The proper scale for the reproduction is that outside the border, which has been reduced with it; the inscriptions on the old scales inside the border—"scale of 165 ft. to an inch" &c., are of course incorrect in this reduced form.

OLD SITES AND BUILDINGS, ST. JAMES'S PARK AND PIMLICO.

THESE views, reproduced from drawings in the Crace collection, are also given in illustration of the article above referred to, pages 4, 5, 6 and 7. The view of St. James's Park from the courtyard of old Buckingham House shows the old long canal-like pond, parallel with Birdcage Walk, which preceded the present irregularly-shaped lake.

The view of the "Jenny's Whim bridge," or "Jenny Whim's bridge" (for it was put both ways), which stood where the street now called Ebury bridge crosses the railway at the end of Victoria station, shows the aspect of that locality as late as 1825, giving some idea of the extraordinary changes which the last century witnessed in this part of London. The water which the bridge crosses was the reservoir of the old Chelsea Waterworks.

The Ranelagh does not, strictly speaking, come within the scope of the article in the present issue, but it touches closely on the borders of the Pimlico district, and is a relic of great interest in itself. The Ranelagh and its gardens were situated at or close to the angle at the present junction of Chelsea Embankment and Chelsea Bridge-road. The Rotunda was a well-known fashionable promenade, frequently referred to in the light literature of the latter half of the eighteenth century. There was a bandstand and an organ, at the latter of which no less a person than "Mr. Handel" occasionally entertained the company with a concerto.

THE LONDON COUNTY COUNCIL.

THE usual meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Mr. A. M. Torrance, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Lewisham Borough Council 6,500*l.* for extension of offices; Battersea Borough Council, 4,060*l.*, for provision of accommodation at the Town Hall; Shoreditch Borough Council, 10,000*l.*, for extension of offices; Kensington Borough Council, 16,447*l.*, for street improvement; Hampstead Borough Council, 2,590*l.*, for erection of library; and the Managers of the Metropolitan Asylums District, 100,000*l.*, for various purposes.

The Works Department.—The Finance Committee submitted their half-yearly return of works completed by the Works Department. During the half-year ended March 31 last twenty-five works had been completed, but the total gave no indication of the turnover of the department during that period, because some of the expenditure on those works occurred previous to the half-year in question, while, on the other hand, a large part of the expenditure

during the six months was upon works which were still unfinished. The approximate expenditure on estimated works for the half-year was 155,000*l.* On the total amount of the work comprised in the statement, viz., 83,924*l.*, there was a balance of cost under final estimate of 391*l.*, or 0·5 per cent. Most of the works had been carried out at a cost somewhat less than the final estimates, as certified by the chief engineer or architect. There were six cases in which the cost had exceeded the final estimate, but in only two was the excess considerable. Those were both architectural works, and in the first case the excess of estimate was 9 per cent., and in the other 10 per cent. The jobbing works for the half-year showed that on 1,214 works there was a balance of cost below schedule value of 857*l.*, or 6·9 per cent. At the present time the department had twenty-nine works in progress (exclusive of jobbing works), representing a total estimated cost of 733,350*l.*, in respect of which work to the cost of 546,507*l.* had up to May 31 been executed. There were also thirteen other works not begun, the estimates for which amounted to 124,983*l.*

Mr. Bruce, chairman of the works sub-committee of the Finance Committee, observed that had this report been laid before the Council last week some of the criticisms of the department which were then made would probably not have been put forward. Although, however, this was a favourable report, there were some works now in hand which might not show quite such good results, but at present those results could not be exactly estimated. Much was said last week as to the reorganisation of the department. He did not think it was feasible to put the department directly under the architect or the engineer, inasmuch as both those officers had their hands very full already. The sub-committee consisted of men of great experience, some of whom might indeed be called experts; and watching the department week by week, they were probably able to form a better idea of the strong and weak points of the department than could be formed by an outside commission such as had been proposed. There was little doubt, however, that what he might call the municipal idea, viz., that the workman would work better for the municipality than for a private contractor, had not altogether been a success. It was to him an important matter that they should see whether some form of co-operation could not be instituted which would give some direct interest to the men, and induce them to put their backs into their work.

Mr. Campbell thought it would perhaps be better for them to go back to the Works Committee. The members of the sub-committee who dealt with works really knew nothing about them.

Mr. H. Clarke considered it inconvenient at that stage to discuss Mr. Bruce's proposals. He thought the hon. member should explain himself more fully. Did he mean that the men were to share in the profits or losses, or to do piecework?

Mr. Howell Williams said they wanted the master's eye on the work done. If the department had gone about the work in the right way, the department would have been a magnificent success. Instead of the Finance Committee dealing with such a gigantic institution as the Works Department, he thought it would be better to reinstitute the Works Committee.

The report was received and adopted, and the necessary excess votes were passed.

Resignation of the Engineer.—The General Purposes Committee reported the resignation of the Council's Engineer, Sir A. Binnie, who desired to devote himself to the private practice of his profession. The Committee recommended the acceptance of the resignation, to take effect at the end of the year, and referred to the works which had been carried out during Sir A. Binnie's eleven years' service.

Several members of the Council expressed their high appreciation of Sir A. Binnie's services, and their regret that the Council was about to lose him.

The recommendation was agreed to.

Fire Insurance.—The joint committee on fire brigade expenditure brought up a report with reference to contributions by fire insurance companies towards the cost of the Metropolitan Fire Brigade. They recommended that the municipal authorities of the principal cities and towns of the United Kingdom should be asked to express their opinions on the general subject.

This was agreed to.

The same committee proceeded to submit a scheme of municipal insurance, and recommended that effect should be given to it by inserting clauses in the Council's General Powers Bill next year.

After a short discussion the scheme was approved, and it was decided to communicate with the Local Authorities of London to obtain their views on the matter.

Streets and Street Traffic.—The General Purposes Committee reported as follows, the recommendation being agreed to:—

"On February 19 last the General Purposes Committee reported to the Council the resolutions passed at the conference with representatives of the City Corporation and the Local Authorities, on the subject of street traffic and the cleansing of streets. Among the resolutions were the following:—

(*a*) That, in the opinion of the conference, all streets paved with asphalt, wood, or granite setts, should be well washed, after first sweeping off and removing all the rough dirt and cleaning the channels, the Local Authorities providing properly-constructed catch-pits.

(*b*) That, in the opinion of the conference, greater supervision of the scavenging is absolutely essential to ensure the efficient cleansing of the roads and footways of the metropolis, and that the surveyor to the Local Authority should have sole responsibility for, and unrestricted control over, all labour employed.

(*c*) That, as a general proposition, where they can be suitably employed, machine brooms are to be preferred to hand labour.

(*d*) That, in the opinion of the conference, it is desirable that Local Authorities should provide sweepers for specified areas for the systematic sweeping of the crossings of main thoroughfares.

(*e*) That, in the opinion of the conference, the sprinkling of roads should be done by vans or carts, and that, having regard to the various considerations which apply, it is preferable to water the sides of the roads and channels as frequently as necessary to lay the dust, and the centre of the road at less frequent intervals, with the idea that the road shall not be all wet at the same time.

In the report it was recommended that the resolutions above quoted should be communicated to the Corporation of the City of London, the Metropolitan Borough Councils and the Council of the City of Westminster. The Main Drainage Committee, however, raised objection to resolution (*a*), and on February 26 the series of resolutions (*a*) to (*e*) were referred to the Main Drainage Committee for report. On April 2 that Committee reported as follows:—

Having regard to the duties of the Council as the main drainage authority for London, and to the importance of keeping at all times the main sewers as free as possible from detritus, especially in times of rainfall, when the unobstructed flow of sewage and storm water may be essential to prevent the flooding of property, we do not see our way to concur in the opinion expressed in resolution (*a*). The result of our experience during past years confirms our belief that the adoption of the resolution would be detrimental to the Council's interests, and we therefore omit it from our recommendation. As regards the remaining resolutions (*b*) to (*e*) we have no observations to offer, and accordingly recommend—

'That the above resolutions, (*b*) to (*e*) inclusive, be communicated to the Corporation of the City of London, the Metropolitan Borough Councils, and the Council of the City of Westminster.'

The report, however, was at our suggestion withdrawn, with a view to the Main Drainage Committee stating more fully their reasons for desiring resolution (*a*) to be omitted. We have been in communication with the Main Drainage Committee and have further considered the matter.

The question of cleansing the streets appears to us to be one of paramount importance, and we do not see that this can properly be done unless the streets are well washed. The Main Drainage Committee appear to be of opinion that if the resolution of the conference is adopted by the Council the result will be that the detritus in the sewers will be considerably increased, and the sewers prevented from taking away the sewage and storm water with sufficient rapidity. We would, however, point out that there is a proviso in the resolution in question that the streets are first to be properly swept, and we think that if the sweeping were performed to the satisfaction of the Council's Engineer, the objections on this score would be met. We recommend—

'That resolutions (*a*) to (*e*) be communicated to the Corporation of the City of London, the Metropolitan Borough Councils, and the Council of the City of Westminster, but that in forwarding the resolutions the attention of the Local Authorities be drawn as regards resolution (*a*) to the necessity for the streets to be thoroughly swept before being washed, the arrangements made for such systematic sweeping being subject to the approval of the Engineer of the London County Council.'"

By-laws as to the Drainage of Buildings.—It was agreed that copies of the drainage by-laws made by the Council, and approved by the Local Government Board, be placed on sale at the price of 2d. per copy. The Board has confirmed the by-law made by the Council for the purpose of repealing the last paragraph of By-law 3 and the whole of By-law 4 under Section 39 of the Public Health (London) Act, 1891, in relation to soil-pipes and the ventilation of the traps of water-closets. Corresponding provisions to those repealed are contained in the new drainage by-laws, Nos. 11 to 17.

Improvements.—The Improvements Committee recommended, and it was agreed, that, subject to the necessary statutory consents to the proposed tramway from the Marble Arch along Edgware-road to the county boundary at Cricklewood being obtained from the Local Authorities concerned, and subject to the Councils of the Metropolitan Boroughs of Paddington and Hampstead agreeing to contribute between them one-third of the net cost of the necessary street widenings and subject also to one-third of the net cost of the street widenings being charged to the account of the improvement, the remaining third being charged to the tramways account, which will also be charged with the whole cost of laying down and paving the tramway track, parliamentary powers be sought in the session of 1902 to enable the Council to widen Edgware-road, High-road, Kilburn, and Shoot-up Hill, in general accordance with the plan approved by the Improvements Committee.

Theatres, &c.—The following proposals were agreed to:—

A room in the basement of the Bermondsey Town Hall, Spa-road, Bermondsey, for use as a dressing and refreshment-room by the persons engaging the public hall (Mr. R. J. Angel).

Certain alterations which it is desired to make to Drury Lane Theatre (Mr. P. E. Pilditch).

Chinese encampments at the London Exhibitions, Earl's Court (Mr. A. O. Collard).

Re-arrangement of the seating in the pit and stalls of the Oxford Music-hall, Oxford-street (Messrs. Wylson & Long).

Office Accommodation.—On the recommendation of the Establishment Committee it was agreed

"(*a*) That the resolution of the Council of March 26, 1901, authorising an expenditure of 8,000*l.* in connexion with a scheme for connecting the premises Nos. 25, 26 and 27, Cockspur-street with the main building be rescinded.

(*b*) That the estimate submitted by the Finance Committee be approved, and that the expenditure of a sum not exceeding 3,500*l.* be authorised for carrying out alterations for the purpose of connecting the premises Nos. 26 and 27, Cockspur-street, with the main building, and further that the expenditure of a sum of 1,004*l.* be authorised for certain repairs, removal of fittings, &c., in connexion with the same work; and that the work be carried out by the works manager as a jobbing work."

Tramway Questions.—Mr. Benn, Chairman of the Highways Committee, in answer to questions, said that the Highways Committee, feeling that the erection of the generating station would delay the adoption of electric traction in South London, had inquiries made in the district, and it was found that they would be able to obtain power there at an earlier date, so that, without being unduly optimistic, within eighteen months they would have electric cars running in South London.

The Committee recommended, and it was agreed—

"That the operation of No. 200 of the Standing Orders of the Council, relative to retention moneys under contracts of less than 100,000*l.* be suspended as regards the contracts for the supply of (*a*) the continuous-current plant, and (*b*) the three-phase plant required for the electricity generating station to be established in connexion with the electrical working of the London County Council Tramways; and that, in place thereof, it be provided in those contracts that 50 per cent. of the value of the machinery be paid to the contractor upon its being delivered at the site, 30 per cent. after the machinery shall have been erected in position, 10 per cent. after its having been taken over, and 10 per cent. after it shall have been maintained by the contractor for twelve months."

The Council, having transacted other business, adjourned.

METROPOLITAN ASYLUMS BOARD.

THE usual fortnightly meeting of this Board was held on Saturday at the Board's offices, Thames Embankment.

The Finance Committee reported that the Works Committee had forwarded an estimate for erecting, fitting-up, and furnishing the proposed receiving house for children at the Tooting Bec Asylum. The estimate, which amounted to 16,670*l.*, included 11,566*l.* for structure of the building, 1,000*l.* for drainage, and 1,120*l.* for furnishing. The committee recommended, and the Board approved, that an application be made to the Local Government Board for an order authorising the managers to expend the sum stated, such expenditure to be defrayed by a loan spread over thirty years.

On the recommendation of the Hospitals Committee it was agreed to accept the tender of Messrs. R. Ballard, Limited, of Child's Hill, in 985*l.*, for the repair of roads at the Northern Hospital. The other tenders were H. Bentham & Co., Streatham Hill, 1,072*l.*; Thos. Adams, Wood Green, 1,097*l.*; Neston & Hale, Harlesden, 1,129*l.*; Robert Borrowdale, Enfield, 1,289*l.*; Myers, Gilson, & Rose, Hornsey, 1,985*l.*

The Works Committee formally reported the terms of the settlement in the case of the managers and Messrs. Kirk & Randall. Amongst the cheques which the Board were recommended to draw were two for 392*l.* and 39*l.* 12s., being the amount respectively of Mr. Tiltman's expenses in connexion with the defence of the action and the costs of the arbitrator's award.

On the recommendation of the Works Committee, the plans of stables proposed to be built at the Tooting Bec Asylum were approved and ordered to be transmitted to the Local Government Board.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

AT the meeting of the London County Council on Tuesday the following applications were considered. Those applications to which consent has been given are granted on certain conditions. Names of applicants are given in brackets. Buildings are new erections unless otherwise stated :—

Lines of Frontage and Projections.

Lewisham.—An extension of the period within which the erection of buildings on the southern side of an extension of Manor Park, Lee, was required to be completed, be granted (Messrs. Johnson & Aldridge).—Agreed.

Lewisham.—A fire-brigade station on the north side of Perry Vale, Lewisham, at the corner of Woolstone-road (O. Fleming for the Fire Brigade Committee of the Council).—Consent.

Hackney, Central.—One-story shops in front of Nos. 489, 491, and 493, Kingsland-road, Hackney (Mr. J. Hamilton for Mr. J. Dyke).—Consent.

Hackney, North.—An addition at the east end, and a porch on the north side, of the Congregational Church, Stamford Hill, to abut upon Portland-avenue (Mr. W. W. Baldwin for the Rev. J. M. Gibbon).—Consent.

Hammersmith.—A block of flats, with shops on the ground floor, on the site of Nos. 156 and 158, Uxbridge-road, Hammersmith (Mr. A. H. Hart for Mr. C. Tarrant).—Consent.

Hampstead.—Wood and tile pent roofs over the entrances to six semi-detached houses on the north side of Rondu-road, Edgware-road, Cricklewood (Mr. J. Phœnix for Messrs. Bridge & Neal).—Consent.

Islington, North.†—Retention of a studio addition at the rear of No. 214, Seven Sisters-road, Islington, abutting on Coleridge-road (Mr. R. Midworth for Mr. J. Fortescue).—Consent.

Marylebone, West.—A building over the stable-yard of No. 3, Finchley-road, St. John's Wood (Messrs. Durrans & Groves for Mr. D. F. Hannay).—Consent.

Wandsworth.†—Five one-story shops on the south side of Lower Richmond-road, Putney, westward of Martyn's Waterman's School (Mr. F. A. Powell for Mr. A. C. Ballard).—Consent.

Wandsworth.—A one-story shop on part of the forecourt of No. 2, Ashlone-terrace, Lower Richmond-road, Putney (Mr. J. G. Warner for Messrs. J. & R. Baily).—Consent.

Marylebone, East.—Retention of a bicycle shed on the forecourt of No. 85, Park-road, St. Marylebone (Mr. F. Perks, for Mrs. C. F. Gordon).—Consent.

Lewisham.—That the Council do make no order with respect to the application of Mr. H. Bender for permission to retain an iron and glass illuminated sign at the Talma public-house, No. 108, Wells-road, Sydenham, in advance of the general line of buildings in Coombe-road.—Agreed.

Clapham.†—Buildings on the east side of Park-hill, Clapham, on part of the site of Nos. 122 and 124, Clapham Park-road (Mr. A. Southam, for the Council of the Metropolitan Borough of Wandsworth).—Refused.

Clapham.—Three houses with shops on the north side of Battersea-rise, Battersea, at the corner of Limberg-road (Mr. G. E. Nield, for Mr. W. J. Vokes).—Refused.

Lewisham.†—An addition to a porch at the side of No. 119, Burnt Ash-hill, Lee, to abut upon Corona-road (Mr. E. Petters, for Mr. S. C. Joyce).—Refused.

Wandsworth.—A block of residential flats on the south-east side of Oakhill-road, Upper Richmond-road, Putney, on the site of Burlington House (Mr. A. Blackford, for Mr. E. Messiter).—Refused.

Westminster.—A one-story shop on the forecourt of No. 280, Vauxhall Bridge-road, Westminster (Mr. S. Nixon for Mr. T. W. Smith).—Refused.

Woolwich.—Houses, with one-story shops on the ground floor on the eastern side of Woolwich-road and south-eastern side of Greenvale-road, Eltham (Mr. G. F. Logsdail for Mr. A. Cameron Corbett, M.P.)—Refused.

Width of Way.

Fulham.—That the application of Mr. W. L. Eves for an extension of the period within which the rebuilding of Nos. 9 and 11, Fane-street, North End-road, Fulham, was required to be commenced, be granted.—Agreed.

Hackney, South.†—A boundary fence in front of stables at Ash-grove Works, Sheep-lane, Hackney (Mr. J. Hamilton for Messrs. W. J. Bush & Co., Limited).—Consent.

Peckham.—Stable buildings at the rear of Nos. 899 and 901, Old Kent-road, Peckham (Mr. J. H. Waterworth for Mrs. M. A. Chalk).—Consent.

Southwark, West.—An addition to a block of dwelling-houses, to be inhabited by persons of the working class, on the north side of Summer-street, Southwark (Mr. F. Bailey for the City of London Electric Lighting Company, Limited).—Consent.

Hackney, North.—A one-story addition to No. 1, Tyssen-pavement, Dalston-lane, Hackney, at less than the prescribed distance from the centre of Hartwell-street (Mr. F. McCann).—Refused.

Width of Way, Lines of Frontage and Projections.

Camberwell, North.—Buildings and boundary walls at the Camberwell Infirmary, Havil-street, Camberwell, at less than the prescribed distance from the respective centres of Havil-street, Brunswick-road, and Brunswick-square (Mr. E. T. Hall for the Guardians of the Parish of St. Giles, Camberwell).—Consent.

Bermondsey.—Warehouse buildings on the site of Nos. 31 to 51 (odd numbers only, inclusive), Long-lane, Bermondsey (Messrs. G. Harding & Sons).—Consent.

Haggerston.—A new wing to the North-Eastern Hospital for Children, on the north side of Hackney-road, Bethnal Green, at the corner of Goldsmith's-row (Messrs. Marshall & Vickers for the Committee of Management of the Hospital).—Consent.

Marylebone, East.—An open portico and a one-story bay-window in front of No. 6, Duchess-street, Portland-place, St. Marylebone (Mr. L. A. Hayes for Mr. W. Tebb).—Consent.

Hampstead.—A laboratory building at the rear of a house known as Danecourt, Hollycroft-avenue, Hampstead, to abut upon Platts-lane (Mr. W. G. King for Mr. A. G. Green).—Refused.

Line of Frontage and Construction of Building.

Hackney, South.—The retention of a covered way between the basement entrances of Nos. 8 and 10, Southwold-road, Hackney (Mr. J. Hamilton for the executors of the late Mr. C. Butters).—Refused.

Width of Way and Construction of Building.

Hammersmith.—A wood and iron workshop in the yard at the rear of No. 21, Eyot-gardens, Hammersmith, at the corner of Homefield-passage (Mr. H. J. Carline).—Refused.

Space at Rear.

Holborn.—A building on the site of No. 66, Theobald's-road, at the corner of Emerald-street, Holborn, with a portion of the building on the open space required to be provided at the rear (Mr. R. L. Cox for Mr. M. Boyce).—Consent.

Formation of Streets.

Woolwich.—That an order be issued to Mr. J. O. Cook, sanctioning the formation or laying out of a new street for carriage traffic to lead from Macoma-road to Ennis-road, Plumstead (for Mr. H. W. Grant).—Agreed.

Deptford.—That an order be issued to Mr. A. J. Glock refusing to sanction the formation or laying out of streets for carriage traffic to lead out of the north side of Knoyle-street, Deptford.—Agreed.

Dulwich.—That an order be issued to Mr. C. J. Bentley refusing to sanction the formation or laying out of a new street for carriage traffic to lead out of the north-west side of Overhill-road, East Dulwich, into a lane leading from Goodrich-road (for Mr. H. G. Leonard).—Agreed.

Dwellings for the Working Classes.

Whitechapel.—Two blocks of intended dwelling-houses, to be inhabited by persons of the working class, and proposed to be erected, not abutting upon a street, on a site between Brady-street-dwellings, Salomon's-almshouses, and the Jew's disused burial-ground, Brady-street, Whitechapel (Mr. G. B. Parkes for the G.E.R. Company).—Consent.

Buildings for the Supply of Electricity.

Greenwich.—An addition on the south side of the Blackwall and Greenwich District Electric Lighting Company's, Limited, generating-station and works, Blackwall-lane, East Greenwich (Messrs. Bramwell & Harris).—Consent.

Woolwich.—Deviation from the plans sanctioned on May 20, for the construction of an electricity generating-station and works on the east side of White Hart-road, Plumstead Marshes, so far as relates to the construction of a chimney-shaft at such works (Mr. F. Sumner for the Council of the Metropolitan Borough of Woolwich).—Consent.

Means of Escape from top of High Buildings.

City of London.—Means of escape in case of fire on the top story of No. 124, Fenchurch-street, City (Mr. G. D. Martin, for Mr. E. G. Marshall).—Consent.

Marylebone, East.—Means of escape in case of fire on the fifth floors of four blocks of residential flats on the site of Harley House, on the north side of Marylebone-road, at the corner of Brunswick-place (Messrs. Boehmer & Gibbs, for Mr. C. J. Hinsley).—Consent.

Dwelling Houses on Low-Lying Land.

Woolwich.—That the solicitor do prepare a licence under Section 122 of the Act to Mr. J. Bailey, for the erection of a dwelling-house on land situated on the north side of Bostall-lane, Abbey Wood, Plumstead (Mr. T. J. Young for Mr. Bailey). Consent.

Greenwich.—That the Council do make no order upon the application of Mr. E. Crosse on behalf of Messrs. Edwards & Edwards for the Council's licence in respect of dwelling-houses erected on low-lying land situated in Azof-street, Christchurch-street and Bellot-street, East Greenwich.—Agreed.

The recommendations marked † are contrary to the views of the Local Authorities.

Correspondence.

To the Editor of THE BUILDER.

THE SAFETY OF ST. PAUL'S CATHEDRAL.

SIR,—You have several times in your columns called attention to the great danger which threatens the structure of St. Paul's Cathedral should the newly-projected railways be permitted to burrow too near its foundations.

It does not seem to be generally known that the building is already cracked from top to bottom, and that in several places. Movements of a serious nature have taken place and have increased.

Sir Christopher Wren was well aware that the subsoil on which he had to place the structure was not very good. He knew that the hard clay lay about 40 ft. below, but we may fairly say that it was out of the question with the means at his disposal to carry down the footings of this vast structure to such a depth. He found that the old cathedral had stood on a layer of "pot earth," as he describes it, varying from 6 ft. to 4 ft. thick, which lay over a bed of sand and shingle. This layer he knew to be not very solid in itself, but unless attacked, as it now has been during the last century, by deep drains, underground railways, &c., it was sufficient. He spread the footings of the church to a very great extent, evidently in view of the nature of the ground. The old cathedral was an excessively heavy building. Its central tower was nearly as large in all dimensions as the Victoria Tower, and on it was a spire as tall as the tower. What had supported this (and no doubt it had but imperfect foundations) Wren considered to be sufficient to carry his dome with very broadly spread footings.

Notwithstanding his precautions the ground yielded a little, consolidating under the great weight of the dome and its supports. The arches of the nave, choir, and transepts which abut on the dome piers have all been dislocated. Had the subsoil been left undisturbed, we may fairly suppose that no further movements would have taken place. At the bottom of the sandy stratum and over the clay water is found, and this no doubt, was soon tapped

as the business of the city increased. A source of great danger to the fabric of the cathedral was thus established.

About 100 years since great ties of iron were put into the cathedral half way up the walls. The transepts were tied back to the dome piers, and were also tied across their fronts in the direction from east to west.

Since that time the south transept has shown strong indications of an inclination to slide southwards down the hillside towards the Thames. And not only is there movement towards the south, but the wall has opened from east to west. This enormous wall, 8 to 10 ft. thick, 130 ft. wide, and of an equal height, is at this moment showing a tendency to move as above stated; and the movements are such that the breakage is evidently caused, not by the thrusting of arches, but by the actual subsidence of the soil beneath.

When we reflect that there are now between the church and the river not only deep drains, but the Underground Railway beneath Queen Victoria-street, and the Waterloo and City line beneath that, it is evident that the subsoil on which the ponderous masses of masonry rest has been seriously attacked. The west front, with its heavy towers and bells, has also subsided.

I must not take up more of your space but to say a word on the masonry of the cathedral. The church is faced externally with Portland stone. The hearting of the walls is entirely of rubble, a mixture of Caen and Oxfordshire stone, procured from the old cathedral, neither hard nor tenacious. The interior is faced with the same Oxfordshire stone, Portland only being used for projections.

Wren knew what stone he had to deal with. He built his piers of sufficient dimensions. There is nothing to show that he made mistakes in his calculations; but he did not anticipate that the support of his foundations would be sapped. The more one is intimately acquainted with this superb building the more one is lost in admiration at the forethought, the ingenuity, and the resourcefulness of "the incomparable Doctor Wren." Let us hope that the much-needed facilities for locomotion will at least respect so magnificent a monument.

SOMERS CLARKE.

PERSHORE ABBEY TILES.

SIR,—For your notice of my book, "The Benedictine Abbey of SS. Mary, Peter, and Paul at Pershore" I have to thank you; but I think in justice to myself you will allow me to say, concerning the drawings of the tiles to which you take such emphatic objection, that they are, as stated on them, facsimile reproductions; they are by no means completed sketches of their original condition, as, I take it, those of Mr. R. W. Paul in your issue of October 2, 1897, are, but are illustrations of them as they *now* are, worn and more or less obliterated.

It may be a matter of opinion as to which is the better form of record, but it seems from your statements that, because I have not attempted to restore the flowing and graceful lines of their designs, I am charged with carelessness and lacking appreciation of their form and beauty. This is not so; and I think you will allow me in this explanation that the criticism was the result of a misunderstanding of my purpose.

FRANCIS B. ANDREWS.

P.S.—As a matter of fact, they each were very carefully traced, and from the tracings, by photographic process, the reduced facsimiles were prepared for the book.

BOOKS RECEIVED.

LOCAL LONDON: A MUNICIPAL DIRECTORY FOR THE METROPOLIS AND SUBURBS. (P. S. King & Son.)

DESIGNING IRONWORK. Second Series. Part II. By Henry Adams, M Inst.C.E. (Published by the Author.)

DICKSON MEMORIAL HALL, LAURENCEKIRK, KINCARDINE. — The Dickson Memorial Hall, Laurencekirk, has just been opened. The building consists of a main hall, with a subsidiary classroom, retiring-rooms, &c. The hall, which will accommodate an audience of about 300, is 63 ft. in length by 25 ft. in width inside, with side walls 12 ft. 6 in. high from the floor to the eaves, and is covered by an open timber roof, the apex of which is about 33 ft. above the floor level. A feature of the building is the timber flèche, which rises to a height of 18 ft. above the ridge of the roof. The roofs are covered with slate from Precelly. The mason work was done by Mr. Alexander Watt, builder, Laurencekirk. The architect was Mr. William Kelly, Aberdeen.

The Student's Column.

GAS AND GAS FITTINGS.

I.—INTRODUCTION.

THE gas industry was founded by the Scotch engineer, William Murdoch, in the last decade of the eighteenth century. Prior to that period no gasworks of any description existed in any part of the world, although it had long been known that inflammable gas could be obtained from coal and certain other substances by distillation, and could be led through a pipe and consumed at its open end.

Claims of priority of discovery of the fact that gas obtained by the distillation of coal could be used for lighting purposes have been made for certain Continental experimentalists, but the fact that Murdoch was the first to establish gas manufacture as an industry, and the first to erect gasworks for lighting purposes on a comparatively large scale, is beyond dispute.

During the nineteenth century the industry rapidly developed into one of foremost importance. Gas-producing plant was erected in every civilised country, and gas securities took rank with those of water and railway undertakings. The introduction of electricity and of cheap oil caused fluctuations in the value of gas shares, but did not cause any diminution in the world's rate of gas production. Not only is the consumption of gas at the present time greater than at any previous period, but extensions of existing plant are in course of erection in numberless districts. At the close of the century 1,614 separate gas undertakings were in existence in the United Kingdom alone, and these collectively manufactured gas at the rate of 156,665,269,000 cubic feet per annum.

In the early part of the nineteenth century all the gas undertakings were controlled by private owners or by companies, but throughout the last half century Local Authorities have evinced an increasing desire to obtain control of the works supplying gas to their respective districts. In spite of the fact that gas properties have become so valuable that high prices have always to be paid for them, we find on reference to the "'Gas World' Year Book" for the current year that 265 gas undertakings in the United Kingdom are already in the hands of the Local Authorities, and included in this list of localities supplied with municipal gas are the towns of Aberdeen, Belfast, Birkenhead, Birmingham, Blackburn, Edinburgh, Leeds, Leicester, Nottingham, and Manchester.

At first gas was manufactured exclusively from coal and was used almost solely for lighting purposes, but as time progressed and the art of gas-making was more closely studied by chemists and engineers, it was found that inflammable gas could be economically manufactured from a number of other materials, and that illumination was but one of a great number of purposes for which gas was eminently suited. Certain kinds of sawdust and timber yield very good gas, and even sewage has its advocates as a gas-making material. In certain parts of the world, notably in the United States, America, vast subterranean accumulations of so-called "natural gas" have been discovered, and these have been tapped and distributed in the neighbouring towns as a substitute for coal-gas. An accumulation of inflammable gas has recently been discovered in this country, at Heathfield, in Sussex, and the gas has been employed for lighting the local railway station by the incandescent gas-light system. The gas in these storage chambers is, of course, all consumed sooner or later, as the formation of gas, if still proceeding, proceeds at a very slow rate. Sometimes, however, the quantity of natural gas discovered is very large, and is sufficient to supply a town for many years. In the neighbourhood of coalfields natural gas had been discovered long before Murdoch was born, but no successful attempt had been made to utilise it for lighting purposes. During the last five years acetylene gas, produced from calcium carbide, has also been extensively used, but at the present time the only gaseous rivals which are being used to a formidable extent as a substitute for coal-gas are water-gas and the diluted form of water-gas commonly termed "fuel-gas" or "producer-gas."

By blowing steam through strongly-heated coke or other form of carbon a non-luminous gas can be manufactured which possesses about half the heating value of coal-gas, and which can be produced in many localities at much less than half the cost. If illuminating gas be required, the non-luminous gas can be mixed with oil-gas or enriched in some other manner, and thus be made to resemble coal-gas in illuminating power. Carburetted water-gas, as the mixture of oil-gas and water-gas is termed, is, however, inferior in some respects to coal-gas of equal illuminating power. The difference between the two varieties of gas will be explained in a succeeding paper.

It is obvious that the solution of the question as to whether coal-gas, water-gas, or carburetted water-gas is the most suitable for the supply of a specific district is dependent upon the local prices of gas-coal, coke, and oil, and upon the purposes for which the main proportion of the gas is required. In some districts cheap gas of a low illuminating value is the most suitable; but in districts in which good gas-coal is abundant and cheap, coal-gas of comparatively high illuminating value remains the most economical supply.

As coke is one of the residuals obtained from the distillation of coal, it frequently happens that a mixture of coal-gas and carburetted water-gas may be economically supplied. As a matter of fact, carburetted water-gas *per se* is very largely used in America, while in London, north of the Thames, and in many other British towns, a mixture of coal-gas with carburetted water-gas is used. In factories where the gas is used for driving engines cheap non-luminous fuel-gas is largely used, the consumption of Mond gas at the works of Brunner, Mond, & Co., in Cheshire, for example, being about a million cubic feet *per hour*.

The manufacture of gas of different composition, specific gravity, illuminating power, and calorific value in different localities has rendered it necessary for a purchaser of gas appliances to take into consideration the district in which the appliances are to be fitted, if they are to be used under the most favourable conditions. The satisfactory use of gas is, moreover, made difficult by fluctuations in the pressure of the gas supplied. In London the tests made by the gas examiners appointed by the London County Council show that the pressure in the street mains varies from about 1·4 in. to 3·8 in. of water, and in buildings the pressure sometimes fluctuates to a yet greater extent owing to defects in the fitting of the local service-pipes, and the height to which the pipes are carried. The pressure in buildings in London seldom exceeds 3½ in., but it often falls to 1 in., and at the latter pressure many gas appliances fail to work in a satisfactory manner. Gas governors may be used to reduce the pressure to any desired point, but are useless when trouble is caused by insufficient pressure. An "atmospheric" gas fire which will burn satisfactorily with coal-gas supplied at 1¼-in. pressure will not burn so well with a mixture of coal-gas and water-gas of the same illuminating power supplied at the same pressure, because water-gas, whether plain or carburetted, has a higher specific gravity than coal-gas, and having a different composition, requires a different proportion of air for its combustion. This fact is recognised by some of the gas-fire makers, who supply a special fitting for use with water-gas mixtures.

Where gas is supplied of uniform composition and at a uniform pressure appliances can readily be devised to consume the gas in a satisfactory manner, whatever may be its composition or the pressure (above 1½ in.) at which it is delivered from the mains; but in London north of the Thames, and in certain other localities, much trouble has been caused by frequent fluctuations in both composition and pressure.

For the incandescent gas-light system non-luminous gas is as serviceable as illuminating gas, provided it possesses the same heating power, and recent experiments by Dr. Strache appear to prove that water-gas, having only one-half the heating value of coal-gas and being quite devoid of illuminating power, may be as efficient for lighting purposes by this system as the coal-gas. If illuminating gas is to be used for incandescent gas lighting, it must be mixed before reaching the point of ignition with sufficient air to cause it to burn with a non-luminous flame; otherwise the mantle will become coated with soot and cease to emit light. In view of the recent statement of Mr. George Livesey, Chairman of the South Metropolitan Gas Company, that 50 per cent. of the gas sold by that company is used for purposes other

than lighting, and of the fact that throughout the country the ratio of gas used for heating to that used for lighting (other than incandescent lighting) is already large and is increasing at a rapid rate, it is apparent that the commercial value of gas is now dependent upon its calorific value rather than upon its illuminating power.

In practical gas manufacture it is found that the higher the illuminating power of the gas the greater is its heating power; but no inflexible law simultaneously controls the two factors, and it is possible to produce two gaseous mixtures, the one giving a non-luminous flame and the other a flame having a certain illuminating power, of which the non-luminous flame shall be capable of yielding more light with the incandescent mantle than the illuminating gas. It has, moreover, been found that the increase in heating power of a so-called "high quality" gas is often very far from being proportionate to the increase in the cost of manufacture; and in Styria the town of Pettau has been brilliantly lighted with non-luminous water-gas and incandescent mantles in preference to employing the more costly coal-gas. The water-gas is made and purified by the "Strache" process, the fuel employed being a low-quality brown coal.

During the last fifteen years the number of purposes to which gas has been applied has increased to a remarkable extent, and has, of course, been accompanied by a corresponding increase in the variety of gas appliances manufactured. The penny-in-the-slot prepayment meter has also been introduced within that period, and has proved so popular that there are already about 800,000 of them in use in the United Kingdom alone. Since the introduction of the slot meter the use of the ring burner for boiling water has become general in all large towns, even in the workman's tenement or cottage, and prepayment gas fires have become extensively employed for hotel bedrooms.

These facts sufficiently indicate the importance to all gas consumers, and especially to students of building construction, of a knowledge of what is being done at our great gas factories, of the facilities which exist for using gas for domestic purposes and in the various arts and crafts, and of the concessions which are now being granted by many gas companies, under the spur of competition, and in recognition of the more extensive requirements of gas consumers of the present day. In the present series of papers these matters will be discussed, and a description will be given of modern burners and various appliances for the use of gas, while the concluding papers will be devoted to acetylene gas and the apparatus employed for its generation and consumption.

Much has yet to be discovered before the highest possible efficiency in light, heat, or power can be obtained from inflammable gas, but a large number of the complaints which from time to time are made against the public gas supply are due to ignorance, and result either from misuse of the gas or from its avoidable deterioration after manufacture. Sometimes the gas manufacturer is at fault; but more frequently the consumer who consumes the gas in unsuitable burners, or the architect who approved the internal fittings of the building and the contractor who supplied them, are really responsible for the fact that the gas fails to perform its legitimate duties. The causes which lead to many of these complaints, and the precautions which must be observed in order to obtain satisfactory results from the gas, will be discussed in subsequent chapters.

OBITUARY.

MR. W. L. SUGDEN.—We regret to announce the death, on June 18, at Leek, Staffordshire, of Mr. William Larner Sugden, aged 50 years, of Leek and Hanley. Mr. Sugden was elected a Fellow of the Royal Institute of British Architects in 1892, and for some years past had been surveyor to the Stoke-upon-Trent Rural District Council. Mr. Sugden was the son of William Sugden, of whom he was partner, and upon the death of his father in September, 1892, he succeeded him in his professional practice. The firm of Messrs. William Sugden & Son carried on a large practice in the northern large manufacturing towns of Staffordshire, including the pottery districts, in South Lancashire, and in parts of the counties adjacent. The firm of Messrs. William Sugden & Son, conjointly with Mr. John Blood, Mr. W. H. Sugden, and Messrs. Chapman & Snape, were architects of the new Public Buildings, Newcastle-under-Lyme, of which we published their own, and the modified designs, as accepted, with elevations and plans, on April 24 and May 1, 1886, and May 4, 1889. Of the other more important works that were entrusted to the firm we may mention the following:—The Congregationalists' New Tabernacle Church Buildings at Hanley (July 7, 1883*); their first premiated designs for a model village at Aintree (August 25, 1888, with ground plan, as laid out by them*); the house, Wyndyate, at Scarborough (October 17, 1885*); and the enlargement of the house, Woodcroft, at Leek (December 12, 1891, elevation, ballroom, and plan*); also, we believe, the police station and the District Bank at Leek. In January, 1899, the firm gained the first premium in the limited competition for the New Liberal Club House at Crewe, and in July, 1889, they won the first premium in the competition in respect of extensive alterations and improvements, comprising new heating and ventilation arrangements, for the Town Hall at Congleton. In 1889-90 they carried out the conversion of the old Mechanics' Institute, Hanley, for purposes of the North Staffordshire Technical Museum. As Surveyor to the Hanley Town Council, Mr. W. Larner Sugden superintended the planning and construction of the Abbey Hulton section of the Bucknall sewerage scheme, and as Surveyor to the Stoke-upon-Trent Rural District Council he acted in a similar capacity in respect of the pumping-station buildings and other works at Bucknall. Of Mr. Sugden's architectural work during the nine years since he succeeded his father, we may cite two houses at Rugby, one being for Mr. T. Hunter (October 24, 1896*), and Hillmorton House, for which the designs were exhibited in the Royal Academy rooms in 1897; "Maison Rouge," at Buxton, for Mr. F. Smallman (December 4, 1897*); "One Ash," at Woodthorpe, near Loughborough; a residence at Quorn, Leicestershire, and a boathouse at Rudyard. In October, 1898, Mr. W. Larner Sugden was appointed architect for the new Technical Schools and the "William Carr" Gymnasium at Leek, which constitute an extension of the Nicholson Institute, as previously planned and designed by the firm of Messrs. William Sugden & Son. He was the architect of the Congregational Manse at Leek (1898); the new head offices, stores, assembly and ballrooms, bakery, &c., for the Leek and Moorlands Co-operative Society; of the new school buildings, &c., at Kingsley, Staffordshire (1894); and, conjointly with Messrs. Mosley & Anderson, gained the second premium—ten sets of designs being submitted—in the competition for the new market buildings at Leeds (1895). Mr. Sugden succeeded Mr. Bradford upon the retirement of the latter as Surveyor to the Stoke Rural District Council, and in 1896 prepared a scheme, which the Council adopted, for a sewage farm, irrigation, drainage, and other works on forty acres of land, an Adams' sewage lift, pumping station at Bucknall, together with main sewers for the whole of the township.

GENERAL BUILDING NEWS.

ST. EUNAN'S CATHEDRAL, LETTERKENNY, IRELAND.—The new St. Eunan's Cathedral, of the diocese of Raphoe, at Letterkenny, was opened on the 16th ult. The cathedral stands on an elevated site overlooking the town of Letterkenny. The building, says the *Irish Independent and Nation*, is cruciform in shape, and at the intersection of the nave and transepts there are four arches resting on four square columns, ornamented with panels carved in high relief with subjects of religious history in Donegal. The aisles are divided from the nave by an arcade of five arches in each side, supported on clustered columns, with carved capitals and bases. The choir is in the form of an apsidal ending with nine sides, in each of which is an acutely pointed arch, communicating with the ambulatory. The ambulatory is lighted by nine lancet windows, and above the chancel arcade are thirteen windows, filled with stained glass, representing incidents in the life of our Lord. The great western door is a high-pointed arch, deeply recessed and richly moulded. Above it is a seven-lighted window with rose tracery. Similar windows of smaller size light the transepts. The tower stands at the north-eastern angle. It will be surmounted by a spire, the whole rising to a height of 240 ft., the tower measuring 120 ft., and the spire 120 ft. The cathedral is 200 ft. long, 100 ft. wide across the transepts, and 66½ ft. across the nave and aisles. There is a departure from the Pointed style in the entrance to the transepts, the doors being in the Hiberno-Romanesque, with characteristic Gaelic ornamentation. On the columnar supports of the arches at the intersection of the nave and aisles the figures in alto relievo in the panels are very interesting. Many striking incidents in the life of St. Columcille are depicted in a series of panels on the column on the right-hand side of the nave; while on the left-hand side is the Adamnan Column devoted to illustrations of incidents in the life of the founder of the church and diocese of Raphoe. Figures of the Trinity and other subjects ornament the arch. The peal of bells, weighing close on ten tons, has been cast by Mr. Mathew Byrne, Dublin. The sanctuary lamp, the tabernacle door, the altar gates, and the lighting appliances have been executed by Messrs. John Smyth & Sons, of Dublin. The following are some of the other contracts:—High altar, Mr. Sharpè; pulpit and sanctuary railings, Mr. Pearse; Lady altar and St. Columba's altar, Mr. Ryan; "Theology" for the Sacred Heart altar and holy water fonts, Mr. Smith; Bishop's throne and choir stalls, Messrs. Beakey; confessionals, Messrs. Noonan; oak seats and case for organ, Messrs. Dovey & Mullaly; oak porch, Messrs. Sharp & Emery; baptistry gates, Messrs. Fagan & Co.; candlesticks and vases, Messrs. Kane & Gunning; stained glass window in baptistry chapel, Mr. Clarke; ornamental gates and railing of enclosure, Messrs. M'Gloughlin. In April, 1891, the tender of Mr. M'Clay was accepted for the work, and the foundation-stone was blessed on September 6. Following on the death of Mr. Hague, the architect, whose plans were chosen for St. Eunan's, his place was taken by Mr. M'Namara. Side by side with the erection of the cathedral were provided residences on an adjoining hillock for the Bishop and the priests.

NEW CHURCH OF ST. COLUMB, BAYSWATER.—The new Church of St. Columb, Lancaster-road, was consecrated recently by the Lord Bishop of London. Mr. Hodgson Fowler, F.S.A., of Durham, was the architect. The builders were Messrs. Godson & Sons, of Kilburn.

SCHOOL CHURCH, NETHER GREEN, SHEFFIELD.—A school-church was opened at Nether Green on the 20th ult., for the Methodist New Connexion body in Sheffield. The premises consist of a school-room, to be used as a school and chapel, and a lecture-room, which will accommodate forty persons. The larger apartment is capable of seating 200 worshippers. The building is of brick, with Ashlar stone dressing, and the architect is Mr. J. C. Innocent.

MISSION CHURCH, LYNN.—The Lord Bishop of Norwich recently consecrated the new mission church of St. Michael and All Angels, which has been erected on the Saddlebow-road, in All Saints' Parish, near South Lynn station. It has a nave 69 ft. long by 35 ft. wide, a chancel 30 ft. by 17 ft., with a choir aisle, organ-chamber, and two vestries. The building is composed of carr-stone and red bricks, and the roof, an open timber one, is covered with red tiles. It has seating accommodation for some 300 people. Adjoining the church is an infants' school with accommodation for about 170 children. The architect was Mr. L. F. Eagleton, and the builder Mr. R. Dye.

HIGHER GRADE SCHOOL, ILFORD.—The Park Higher Grade School, situated in Melbourne-road, Ilford, was opened recently by the Bishop of Barking. Mr. C. J. Dawson, the architect, explained that the new building was designed on the central hall and classroom principle; it comprised three stories, and provided accommodation for 300 boys and 300 girls. Besides the central hall, which was 68 ft. by 30 ft., there were lecture and classrooms and all the accommodation required for the teaching staff and scholars. The classrooms would be heated with open grates, and the central hall, cloak-rooms, corridors, laboratories, lecture-rooms, &c., with hot-water radiators and pipes. The contract price was 16,710*l.*, and the total cost, with furniture, &c., would be 19,600*l.*

FIRE STATION, WEST HAMPSTEAD.—On the 24th ult., Mr. J. D. Gilbert, Chairman of the Fire Brigade Committee of the London County Council, laid the memorial stone of a new fire station to be erected by the Council in West End-lane, West Hampstead. The station is to be built on land fronting the old village green of West End. The site cost 1,756*l.* 9s. 10d., and has an area of 16,000 square feet. The cost of the building will be about 11,373*l.* The plans have been prepared by Mr. W. E. Riley, Architect to the Council.

WESLEYAN CHURCH, TANFIELD, BEDALE.—A new Wesleyan church was opened on the 21st ult., at Tanfield, Bedale, the architects being Messrs. W. J. Morley & Son, of Bradford. The building is of stone, in the Decorated Gothic style, with tower and spire. The interior woodwork of pews and of the open wagon-headed roof is of pitch-pine, and the tracery windows are filled with leaded lights, a special feature being a figure window in the transept, which is the gift of Mr. George Bolton, of Bradford. Accommodation is provided for about 205 persons, and there are vestries for the choir and for the minister. From the minister's vestry access is gained to the pulpit. A band room is also provided at the rear of the church, and the old chapel adjoining the new premises will be used as a school.

BALTIC MERCANTILE AND SHIPPING EXCHANGE, LONDON.—The foundation-stone was laid on the 25th ult. of the new building in Jeffreys-square, E.C., of the Baltic Mercantile and Shipping Exchange. The new building will have two frontages, the one in St. Mary-axe of 86 ft. and the other in Bury-street of 72 ft. The Exchange and offices connected therewith will occupy the whole of the ground floor, the principal entrance being in St. Mary-axe, and consisting of an outer arcaded vestibule 32 ft. by 16 ft., and an inner hall 40 ft. long and 24 ft. wide, on either side of which there will be the secretarial offices and boardroom. The Exchange will be 152 ft. long, 94 ft. wide, and 30 ft. high, with a central dome 30 ft. in diameter. On one side of the Exchange there will be a semi-circular bay, containing a staircase leading to the

*Illustrated in the *Builder*.

basement and the members' cloakrooms, lavatories, &c., and on the other side a similar bay containing twenty telephone boxes. The end of the Exchange will be a semi-circular apse, from which there will be access to Bury-street and entrances to postal and telegraph offices and members' reading-rooms. The basement will be arranged as luncheon and smoking-rooms for the members, with extensive lav. tory accommodation, auction and arbitration-rooms, kitchen and offices, and below this there will be a sub-basement, which will be fitted up with the different machinery for the electric light installation, heating, ventilating, pumping, &c. Above the Exchange there will be four floors of offices—about 200 rooms in all—approached by three staircases and electric lifts, two of these to be connected with entrances in St. Mary-axe and one with the entrance in Bury-street. Externally the front facing St. Mary-axe will be in polished granite up to the first floor level, and above this in Portland stone, with polished granite columns. The contractors are Messrs. G. Trollope & Sons, and the architects are Messrs. T. Smith and W. Wimble.

SANITARY AND ENGINEERING NEWS.

KIRKLEE BRIDGE, NEAR GLASGOW.—On the 13th ult. the new bridge which has been erected across the Kelvin to connect Kelvinside with the rapidly-developing district of North Kelvinside was opened. The new bridge was designed by Messrs. Formans & M'Call, engineers, and constructed by Mr. Wm. Wilson. Its erection was begun in the end of 1898. Kirklee Bridge is an elliptical arch with a span of 80 ft. and a rise of 31 ft. 9 in., the soffit of the arch rising to a height of 36 ft. above the bed of the river. The main arch is flanked by two semi-circular arches of 18 ft. span, supporting the approach roads, and the openings afforded by these arches are made use of for carrying the ornamental walks formed in connection with the Botanic Gardens along both sides of the river. The bridge is built at such an elevation as to form a level roadway between Montgomerie-street, in North Kelvinside, and Kirklee-road. The total length of the new connecting roadways is 250 yds., including the bridge. Throughout the bridge and its approaches the carriageway is 30 ft., with a footway on either side of 10 ft.—50 ft. in all. The masonry of the bridge is of Dumfries red sandstone. Polished granite columns are introduced in the pilasters supporting the entablature which carries the polished granite bases of the lamp pillars. The latter, which are not yet in position, are being made of wrought iron. The parapet is also formed of the same polished red granite from the Ross of Mull. The spandrel walls are enriched by the introduction of the city arms carved in relief. In building the wing walls the masonry has been dressed with a rock face, and the slopes dressed off. Apart from the land acquired from the Kelvinside Trustees, the bridge has cost 20,000*l.*, of which the Caledonian Railway Company have given 10,000*l.* The ground in the neighbourhood of the bridge is being laid out as public gardens.

ELGIN WATER SUPPLY.—Mr. Fraser, C.E., Inverness, has recommended a scheme for new water supply for city of Elgin, the high-level works to cost 12,680*l.* and the low-level works 9,770*l.*, together 22,450*l.* Elgin Town Council, however, has resolved that no action be taken on the report, but that negotiations be reopened for a permanent right to the present Blackhills water supply, which is considered ample for all requirements of Elgin.

SEWERAGE, KINGSBURY, MIDDLESEX.—Mr. H. P. Boulnois, Inspector of the Local Government Board, held an inquiry at the Urban District Council's offices on the 19th ult. into the application of the Council to borrow 10,500*l.* for works of sewerage and sewage disposal. Mr. S. Slater Grimley, the Consulting Engineer to the Council, explained the various details of the scheme and the mode of treatment to be adopted at the outfall works, and stated that his scheme was designed for a population of 5,000 and for double-contact bacteria filters after the sewage had been screened and allowed to deposit in tanks, with subsequent filtration through land. The bacteria filters (except the storm water filter) and the tanks were, for financial reasons, omitted from the present application, but five acres of land were proposed to be drained and prepared for irrigation and lateral filtration until the population of the district increased, when the scheme could be completed by the construction of such filters and tanks as designed. At the close of the inquiry the Inspector viewed the proposed outfall works and the routes of the proposed sewers.

FOREIGN.

FRANCE.—The municipality of Ivry (Seine) has just erected an "Ecole Maternelle," the expense of which is estimated at 108,000 francs.——The municipality of Amiens has voted the sum of 315,000 francs for the building of schools.——A new Hôtel de Ville by MM. Defresne and Rousselet has just been inaugurated at Neuilly-en-Thelle (Oise).——The General Council of Civil Buildings has approved of the plan for the future Municipal Casino at Cannes, the expense of which is estimated at over 2,000,000 francs.——The town of Boulogne-sur-Mer has been authorised to vote a sum of 320,000 francs for the building of a school establishment.——The Municipal Council of Bordeaux has approved the project presented by MM. Dalou & Formigé for the monument to be erected to the memory of Gambetta in the Allées de Tourney. Gambetta is represented as standing leaning against a tribune. The pedestal which supports the statue is ornamented with two groups. To the right Wisdom is supporting dying Liberty; to the left a young child is protecting the "Patrie." Palms, garlands, and warlike attributes decorate two sides of the pedestal. The groups of sculpture are to be carried out in white marble.——A sum of 400,000 francs has been voted by the town of Avignon for the construction of barracks, which, let us hope, will ensure the protection of the celebrated palace of the Popes from further injury, and allow of it being put to a better use than it is at present.

GERMANY.—A statue of the Emperor Frederick by the sculptor Johann Boese was unveiled at Oels, in Silesia, on the 27th ult., in the presence of the Duke of Trachenberg, the President of the Province. The statue, about 11 ft. in height, is mounted on a granite pedestal, and represents the late German Emperor in the uniform of his Silesian dragoons.

INDIA.—The large bridge over the Musi River, at Hyderabad, which has taken nearly three years to construct, was opened recently by the Nizam. It is 100 yards in length, and cost 1¼ lakhs of rupees.——The Government of India has sanctioned the installation of the Jewell system of filtration in connexion with the water supply for the civil and military station of Bangalore.——Plans are being prepared for new offices of the Public Works Department, proposed to be built in Colombo, Ceylon.——The Government of India has decided to build a new Foreign Office in Calcutta in close proximity to the new Military Secretariat now under construction.——Extensive additions to the waterworks of the city of Jammu have been sanctioned by the State Council of Jammu and Kashmir State. The plans have been prepared by the State Engineer, Mr. H. S. Wildeblood.——The Eastern Bengal State Railway is making very large additions to its terminal accommodation, and have sanctioned important extensions to the railway station at Naihati.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Messrs. Barnes-Williams, Ford, & Griffin, architects, of 24, Railway Approach, London Bridge, S.E., have taken city offices at 30, Coleman-street, E.C., the two offices being in communication by telephone.——Messrs. Easton & Co. (late Easton, Anderson & Goolden) have appointed Mr. F. A. Porter, of 13, Queen's-square, Belfast, and 35, Parliament-street, Dublin, as their sole agent for Ireland.——Mr. Silvester Sparrow, artist in stained glass, has changed his address from 2, Talgarth-road, West Kensington, to 43, St. Peter's-terrace, Ravenscourt Park, W.

ASHBURTON MONUMENT, CHARTERHOUSE SCHOOL.—Mr. Howard Ince, the architect of this monument, illustrated in our last issue, would like us to mention that the illustration was from a photograph by Mr. Fry, of Brighton.

HOUSING OF THE WORKING CLASSES (LONDON).—The Four per Cent. Industrial Dwellings Company are about to erect dwelling-houses, having front shops on the ground floor, on the west side of High-street and the south side of Victoria-road, Stoke Newington. The Metropolitan Association for Improving the Dwellings of the Industrial Classes will also erect similar dwelling-houses at the rear of Gibson's Buildings, Northwold-road, in the same parish. In the North Lambeth and Kennington districts the London and South-Western Railway Company have undertaken to provide accommodation for the inhabitants to be dispossessed by their new works in the vicinity of Waterloo terminus by the erection of three blocks of industrial dwelling-houses upon a site lying between Burdett-street and Gloucester-street, together with two more blocks on the north and south sides respectively, of those two thoroughfares. The railway company have also prepared plans and estimates in respect of four similar blocks upon the ground situated between Boniface-street and Lambeth Upper Marsh, Lambeth, with another block on the north side of Upper Marsh, and in respect of four blocks to occupy the site of Nos. 48-72 (even numbers only) inclusive, in South Lambeth-road, Kennington. At their meeting on Wednesday last the St. Pancras Borough Council approved the plans for the erection of a block of dwellings upon the site of the stoneyard in Great College-street, Camden Town.

THE LABOUR MARKET IN THE COLONIES.—According to the July circular of the Emigrants' Information Office (31, Broadway, Westminster), this is the best season of the year for emigration to Canada. There is a good demand for coal and other miners, more especially in British Columbia and Cape Breton, Nova Scotia. There is a fair demand for general labourers, and for certain mechanics, such as carpenters, blacksmiths, and iron and steel workers, but not at St. John, New Brunswick, or at Winnipeg, Manitoba. In New South Wales the dispute in the coal trade has been settled. A report from Sydney states that trade continues good, more especially for plumbers and builders, and the engineering trade has perhaps never been so busy. There is plenty of opening for good artisans in the engineering and general building trades, as well as for general handy men. In Victoria there is practically no demand in Melbourne or the other towns for more mechanics or labourers, unless they are specially skilled, and bring a little money with them. Many unemployed have been provided with work during the last few weeks on railway construction. The Government have decided to spend 16,000*l.* on irrigation works in the Mallee, which will benefit the local farmers, and at the same time provide work for those out of employment in Melbourne; about 300 men are now engaged on piecework at 8d. to 10d. per yard. In South Australia there is practically no demand for more mechanics in the towns, but a skilled hand such as a mason, bricklayer, engine fitter, blacksmith, joiner, or carpenter can generally find employment after looking about for a little. Owing to drought and scarcity of employment, emigrants (other than female servants) are not recommended to go to Queensland at present, unless they receive nominated passages or take a little money with them. In Western Australia, according to the official labour return for the first quarter of 1901, there is no demand for miners anywhere. At Perth and Fremantle and Katanning there is a demand for mechanics in the building and other trades, good men getting constant employment at Perth; but elsewhere the supply is either sufficient or, as at Coolgardie, in excess of the demand. At Jarrahdale there is a steady demand for sawmill hands and fellers. In Tasmania the supply of labour is, generally speaking, equal to the demand. In New Zealand, with the exception of a few places such as Dunedin, where some carpenters and boilermakers have been out of employment, the building and engineering trades have been busy everywhere. In Natal a few guards, engine-drivers, firemen, cleaners, and platelayers are wanted on the railways. Candidates must apply to the Agent-General for Natal, 26, Victoria-street, London, S.W., stating age, height, and experience, and enclose testimonials. Otherwise all persons are again warned against going to South Africa at present in search of professional or manual work unless they have ample private means to meet the very high cost of living. They will not, as a rule, be allowed to proceed up country.

FOWEY HALL, CORNWALL.—Messrs. Arrowsmith & Co. ask us to mention that the solid inch oak floors throughout the above-named house (illustrated in our last issue) were laid and polished by them.

CONFERENCE ON THE HOUSING QUESTION.—A conference of members of the London County Council and delegates from the London Borough Councils was held on the 28th ult. to consider their respective spheres of action under Part III. of the Housing of the Working Classes Act, 1890, as amended last year. Mr. Torrance, Chairman of the L.C.C., presided at the conference, which was held at the County Hall, Spring-gardens. Mr. Waterlow, Chairman of the Housing of the Working Classes Committee of the London County Council, said they would gladly welcome any assistance from the Borough Councils, at whose request the conference was convened. Their object was to avoid all clashing between the various public bodies who had powers under the Act. If judiciously used, their new powers ought to mean some solution of the housing problem, but there were certain risks. The first was that each body would leave its neighbours to do the work, but he believed the public opinion of the metropolis was so roused on the housing question that the risk of falling between thirty different stools might be disregarded. More serious was the risk of several public authorities seeking to acquire the same area of land, and thus putting up the price. He hoped the conference would find a means of avoiding that danger. Then it was said that if all the Councils started building there would be too many houses, but he did not think that was likely to occur for ten years at least. There was an immense demand for working-class houses, and he hoped and believed the Borough Councils were prepared to do all they could to supply that demand. His committee would be glad to give any information, gained by their experience, to assist Borough Councils in putting up dwellings. No doubt the cost of these dwellings was great, and at first there must be a charge upon the rates; but they would have a valuable asset in the land, which would always be worth its price, and at the expiration of the sinking-fund there would be the reversion of a freehold property, producing a large income. There were an immense number of cases of overcrowding, as shown by the census returns, which spoke of five or six, and even ten or twelve, persons living in one room.—Mr. Dickinson moved, as an amendment to a previous resolution:—"That, with a view to obviate any possibility of overlapping or clashing as between the various authorities in London charged with the duty of erecting houses for the working classes under Part III. of the Housing of the Working Classes Act, 1890, as amended by the Housing of the Working Classes Act, 1900, it is expedient that when either the London County Council or any metropolitan Borough Council contemplates acquiring land for the above purpose such Council shall, at the earliest moment consistent with the

public interest, communicate its intention to the Borough Council within whose area the land in question is situated, and to the London County Council." The amendment was carried and became the substantive motion. It was sharply criticised and eventually defeated. An Islington scheme was accepted as follows:—"That it is desirable, with a view to avoiding dual control and overlapping expenditure, that no scheme for the housing of the working classes in any metropolitan borough should be promoted by either the London County Council or the Council of any metropolitan borough, pursuant to Part III. of the Housing of the Working Classes Act, 1890, except after due consultation between the two Councils (*a*) as to the desirableness of the scheme, and (*b*) in order that the cost of such scheme may be fairly apportioned between the county and the particular borough." Two suggestions from Westminster, proposed by Sir J. Wolfe-Barry, and seconded by Mr. Henry Tozer, were agreed to. They were:—"That, in order to ascertain the immediate responsibility of each Borough Council, a simultaneous special inquiry be made by each Council as to the number of the working class that it may be necessary, by the conditions and circumstances of their employment, to house within the area of each borough," and "that reasonable modifications of the existing building laws and regulations are essential in order to facilitate the further erection of industrial dwellings." The conference was adjourned.

SOCIETY OF ARTS.—The Society of Arts held their annual conversazione this year, on Friday, the 28th ult., as a garden party, at the Botanic Gardens, instead of going as usual to the South Kensington Museum. The night was fine and the affair was a complete success, and a very agreeable variation from the usual programme. The gardens were illuminated in a most liberal and effective manner, the trees appearing to bear a new fruitage of sparkling lights, in addition to the usual array of Chinese lanterns, &c., along the walks. A concert of instrumental music was given in the conservatory at 9, by the string band of the Royal Artillery, and at 10.30 the band of the Grenadier Guards gave a performance on the west lawn, the commencement of which was a little delayed owing to a want for the moment of sufficient lights for the players—a point to be borne in mind on future occasions. A vocal and instrumental concert was given at intervals in the club-house by the Royal Criterion Handbell Ringers and Glee Singers, which was so attractive that the room was filled all the evening and there was an overflow audience round the windows. Refreshments were supplied in the café attached to the club-house, and in marquees on the lawn. Entertainments of this kind are of course so entirely dependent on the weather, that there is always a certain risk in undertaking them; but the result on this occasion was so satisfactory that the Society's guests will probably hope that the risk will be taken again.

CAPITAL AND LABOUR.

GLOUCESTER BUILDING TRADE.—A special meeting of the Master Builders' Association for Gloucester and district was held recently at the New Inn Hotel, to consider a letter received from the Secretary of the Builders' Labourers to the effect that unless something further was done to meet the men's demand for an increase of wages and suggesting arbitration "he was afraid that extreme steps will be taken." The President (Mr. G. O. Estcourt) presided. As the result of their deliberations the following resolution was carried: "That this meeting adheres to the resolution passed at the meeting held on December 17 last, thus leaving nothing to refer to arbitration." The resolution reads as follows: "That the present state of trade does not warrant any increase or promise of increase in the rate of wages of builders' labourers."

TEES-SIDE AND HARTLEPOOLS JOINERS' STRIKE.—A meeting of the Tees-side Master Builders' Association was held at the Y.M.C.A., Stockton, on the 26th ult., to take into consideration the joiners' strike. It was reported that there had been a meeting of the executive of the Northern Centre of the Employers' Federation and the Amalgamated Society of Carpenters and Joiners at Leeds, when the employers had offered to increase the joiners' wages from 9d. to 9¼d. per hour, whilst amongst other things agreeing to pay the actual out-of-pocket lodging expenses of the workmen when on jobs outside their own town. The men had, however, held to their claim of 9½d. per hour, though they had expressed their willingness to accept actual out-of-pocket expenses as an amendment to rule 5, at the same time stating that an adjustment of the Hartlepools walking time might be arranged by a joint local committee as agreed by the employers. After a lengthy meeting the Tees-side employers agreed to abide by the offer of the farthing advance made at Leeds by the executive committee, whose action they confirmed.

SCARBOROUGH STONEMASONS' DISPUTE.—Early this year the operative stonemasons gave six months' notice to the Scarborough Master Builders' Association for an increase of wages from 8d. to 8½d. per hour, and alterations in working rules. The Builders' Association considered the matter, but, taking into consideration the state of the building trade in Scarborough, they decided to offer the operative masons a reduction of ½d. per hour. A deputation from the Master Builders' Association met a deputation of the masons. After due consideration of the matters in dispute, an arrangement was arrived at, the result being that the wages remain as at present, and certain modifications in the working rules were made. This agreement was signed by the two deputations.

STRIKE OF MASONS AT BURTON.—The masons at Burton-on-Trent struck work on the 1st inst. for an advance of 1d. per hour. The present wages are 8½d.

LEGAL.

ACTION BY QUANTITY SURVEYOR AGAINST ARCHITECT.

THE case of Michel *v.* Day came before Mr. Justice Ridley, sitting without a jury in the King's Bench Division on the 26th ult. It was an action brought by Mr. Emile Benjamin Michel, a quantity surveyor, residing at Casewick-road, West Norwood, against the defendant, Mr. R. Philip Day, an architect, to recover 183*l.* 16s. for preparing bills of quantities for proposed additions to St. Paul's Church, Thornton Heath, and a perspective view and specification.

The statement of claim alleged that the defendant, in June, 1900, on behalf of himself, or, alternatively, as agent for and on behalf of principals whom he did not disclose to the plaintiff, and who were unknown to the plaintiff, requested him to prepare bills of quantities for proposed additions to St. Paul's Church, Thornton Heath, and to prepare a perspective view and specification. In compliance with such request the plaintiff prepared the bills of quantities, perspective view and specification, and sent them to the defendant, who accepted the same, and upon them obtained tenders from builders to execute the work. The lowest tender was one of 6,821*l.* 16s. 2d. from Mr. D. Furniss, of Peckham. The plaintiff also, at the request of the defendant, made various alterations in the quantities, and made out a reduced account with additions and omissions, and wrote many letters and paid many visits to the defendant and the church in question. The plaintiff alleged that the usual and proper remuneration for bills of quantities was a commission of 1½ per cent. upon the accepted tender, or the lowest tender, plus out of pocket expenses and remuneration for extra work done.

The defendant, by his defence, denied that he had ever requested the plaintiff to prepare the bills of quantities or to do any of the other work mentioned in the statement of claim for himself (plaintiff), and alleged that in all dealings in reference to the church, the defendant acted as the agent for the Vicar and Building Committee of the church, and in no other capacity, as the plaintiff well knew. He also alternatively pleaded that if he was under any personal liability to the plaintiff, the plaintiff's quantities were incorrect and excessive, whereby the tenders were too high, which caused him (defendant) to employ another quantity surveyor to prepare correct bills of quantities. The defendant further traversed the other allegations in the statement of claim, and alleged that it was verbally agreed between the plaintiff and himself that if a tender based upon the plaintiff's quantities was accepted the plaintiff should receive as remuneration 1½ per cent. commission on the amount of the tender, together with out of pocket expenses, to be paid by the builder whose tender should be accepted; but that if no such tender was accepted, the plaintiff should be entitled to out of pocket expenses only. No such tender, in fact, was ever accepted. The defendant, whilst denying liability, paid 30*l.* into court as being sufficient to satisfy the plaintiff's claim.

Mr. Arthur Powell appeared as counsel for the plaintiff, and Mr. Disney for the defendant.

His lordship, after hearing evidence and the addresses of counsel, in giving judgment said that the only question he felt he had to decide was whether the architect had made himself liable for the employment of the plaintiff as quantity surveyor in the matter in question. The question was, did the defendant as architect contract with the plaintiff without naming his principals? His lordship thought he did not. He thought the true state of things was that when the plaintiff came to Mr. Day he was told by Mr. Day that he was to be employed for the church, and he gave him the name of the vicar and told him that there was a building committee for whom he was acting. According to the ordinary rule, the architect was not the employer of the quantity surveyor. The architect was the person who was avowedly contracting for somebody else. In other words, the architect was simply an agent. He did not say, of course, that in every case where an architect was employed he was entitled to engage a quantity surveyor. Sometimes it was not necessary, the work not being of a sufficiently important description to require it. In the present case the nature of the work was such that quantities were necessary, and from the evidence it was clear that the Building Committee knew that the architect was employing a quantity surveyor. His lordship considered that the plaintiff had no case against the architect, and, therefore, judgment ought to be for the defendant, with costs. He was not able on the other branch of the case to give an opinion as to what should be paid to the plaintiff for his work if the Court of Appeal held that he was in the circumstances entitled to recover from the defendant. If the Court of Appeal should be of opinion that there was a liability on the part of the defendant, then there must be a new trial to ascertain the amount due to the plaintiff, unless the parties could agree to the amount.

His lordship accordingly gave judgment for the defendant on the main point, with costs, and granted a stay of execution pending an appeal to the Court of Appeal.

ACTION BY ELECTRICAL ENGINEERS UNDER A CONTRACT.

THE case of Foote & Milne *v.* Silcock came before Mr. Justice Ridley in the King's Bench Division last week, it being an action by the plaintiffs for 100*l.*, the amount of an unpaid bill (with interest) which had been given by the defendant in connexion with some electrical work carried out at the Star and Garter Hotel, Putney, and flats adjoining. The defendant pleaded that the plaintiffs had not completed the work under their contract, and that consequently consideration for the bill failed. The signature on the bill being admitted,

Mr. Thos. Terrell, K.C., for defendant, said Mr. Silcock was building the hotel in question and a considerable block of flats. Originally tenders had been sought for engines, dynamos, wiring, and, in fact, a complete installation, but the proposals were modified, and the plaintiffs on June 13, 1900, by letter contracted to supply all the necessary mains, distribution boards, switching, wiring, &c., for 440 lamps for 475*l.*, or, if they were to do the cutting away, 485*l.* The terms of payment by the contract were to be by acceptances at three months, to be given when work of that value was completed; and it was further provided "that for the purpose of calculating the value of the work done the branch wiring should be taken at 19s. per light." What the plaintiffs had not done was: (1) They had not put in the distribution boards to go with the mains, the value of which was estimated by defendant's electrical engineer at 51*l.* 2s.; (2) they had not put in seventy-six lights, which, at 10s. per light, making allowance for the mains laid, left work valued at about 58*l.* 18s. to be done. Other parts of the work not absolutely completed would cost 7*l.* 10s., and there was a switchboard for the assembly-rooms which would cost 3*l.* Also there were the arc lamps, with brackets and fixing, which would cost 57*l.*, and the wiring and boards for the same, 6*l.*, fit to be put in. What the plaintiffs had done beyond the contract was to put in extra lights which at 19s. per light would amount to 53*l.* 4s. Taking the balance of the account, the plaintiffs had actually work done representing 344*l.*, and they had already been paid 380*l.*, not counting the 100*l.* on the bill now sued on and in respect of which his case was that they had not done the contract work which alone made the money due.

Mr. J. F. P. Rawlinson, K.C., for the plaintiffs, said that the fallacy in his learned friend's argument was that the work was not complete. The plaintiffs were ready and willing to complete the entire work as soon as they had been paid, as under the contract—viz., 19s. in respect of the branch wiring of each light. They had put in 476 lights, on each of which the payment of 19s. was due.

His Lordship: Unless you can show, Mr. Terrell, that the work has not been done I do not see that you have any answer to the case.

Mr. Terrell pointed out that the mains were not complete or the distribution and switchboards. Was he to pay the entire contract price which this 19s. per lamp worked out to when the work had been only half done, merely because the plaintiffs had put in the branch wiring?

His Lordship: Yes, that is what the contract says. You may have made an improvident bargain, but there it is.

Mr. Terrell argued that the construction his Lordship was putting on the contract was an improper one, and gave the plaintiffs right to payment for the entire contract, though they had completed only a part of it.

His Lordship: I think they are entitled to say, "We have done the branch wiring of so many lights. Therefore you must give us the full amount."

Mr. Terrell: That means I have got, in your Lordship's view, no defence.

His Lordship: That is so.

The case was therefore decided on the point of law on the construction of the contract, and his Lordship entered judgment for the plaintiffs for 100*l.* and costs.

In a second action in respect to a bill of exchange for 30*l.* judgment was also given for the plaintiffs.

Execution was stayed with the view to an appeal on the defendant bringing the money into court.

CONSECRATION OF KILBONANE CHURCH, IRELAND.—The consecration of Kilbonane Parish Church took place on the 25th ult. The new sanctuary is from the design of Mr. William Henry Hill, Cork. It is built of limestone.

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

4,053.—APPARATUS FOR DOORS AND GATES: *J. A. Orme.*—The apparatus for automatically closing and opening the gates and doors of lifts, wells, railway crossings, and so on comprises a hollow sleeve, with ball bearings that project from the cage between brackets, in which are squared holes wherein will slide a rectangular shaft about which the sleeve freely turns. Two side-studs on the shaft engage with two grooves cut in the sleeve, and a spring is inserted between the lower bracket and the enlarged end of the shaft. When the cage has reached a floor it is struck with a foot, which, as it pushes the shaft upwards, causes the sleeve to turn, and so opens the door; but with the ascent of the cage the door becomes closed as the spring presses the shaft downwards again. For gates at railway crossings and elsewhere is devised a rod having spiral grooves that engage with a sleeve which levers will lower and raise.

4,063.—A LIFTING-DOG FOR USE WITH CRANES: *T. B. Mackenzie.*—The inner ends of levers that are pivoted upon a frame are linked to a block in which are pulleys, around which the lifting-ropes are passed; a rope that opens and shuts the dog joins the frame to a pulley, and a third rope from the winding-drum is passed around that pulley, one end of it being secured to another drum which lifts and lowers the pulley for opening and closing the dog.

4,084.—AN APPLIANCE FOR A MITRE PLANING MACHINE: *R. Connor and T. Connor.*—Fences that may be clamped with set-screws receive the mouldings of which the ends are worked with a plane fitted with two irons that are set so as to cut in both directions, a power-driven crank and connecting rod reciprocate the plane.

4,088.—A BAND-SAW SETTING AND SHARPENING MACHINE: *O. C. Pendleton.*—Two spiral files which will sharpen and set the teeth of band-saws at one time are rotated in opposed directions with hand-turned bevel-gearing, as the saw is held at the sides with a pivoted frame, and at the back with an adjustable grooved piece. Cams upon the axis move two pivoted arms which set the teeth, and when one pair of teeth have been filed and set the movement of an inclined plane upon the teeth feeds the saw another step forward.

4,102.—WELL-DOORS OF LIFTS: *H. Kurlzig*—As the cage approaches a landing in its ascent a spring at its top engages with a catch that projects from the sliding door, which is thereby lifted. With the continued ascent of the cage the catch is forced out of its engagement into a recess in the door, so that the door will fall through its own weight. For the descent of the cage a sliding catch which is fastened to the door with a rope passed around pulleys will engage with a catch underneath the cage.

4,114.—AN ARTIFICIAL STONE FOR BUILDING-BLOCKS, &C.: *A. Denaeyer.*—A compound is made of ground sand, gravel, asphalt, lava, granite, porphyry, calcareous stones, sawdust, and similar mineral or organic substances, mixed up with colloidal calcium silicate, which is obtained by the double decomposition of some alkaline silicate with calcium hydrate or chloride, &c.

4,163.—AN ELLIPSOGRAPH: *A. E. Hotchkiss*—In this instrument, which is adapted for both drawing and cutting ellipses, an arm that has two fixed points which will slide along slots cut at a right angle carries the pencil or cutter; a protractor that turns the instrument to one side, together with the axis of the ellipse, through any angle desired, joins the slotted arms. In one shape the extended describing-arm is graduated in both directions from the zero-pivot, in order that when the holder is shifted from one side to the other one may describe ellipses having their principal axes at 90 deg. For describing circles a screw can be depressed into a recess cut in the zero-pivot, and for cutting glass a wheel, or a curved blade, can be fixed to a support; the wheel and two supporting wheels may be mounted upon castor-hangers.

4,166.—A COATING OR MATERIAL FOR FIRE-PROOF AND ACID-PROOF PURPOSES: *E. W. Engels*—Carborundum, produced with an electrical furnace, is combined with the Dinas stone, firebrick, or other body which is to be treated by means of either rubbing the carborundum into the moulded, but unbaked, articles, or applying it, together with boric acid, water-glass, and so on, to the articles when finished, baked, or dried. For binding purposes the carborundum should be made up with the dolomite, clay, or other materials out of which the bricks or blocks are moulded. (See also No. 24,378 of 1898.)

4,172.—FEED MECHANISM FOR CIRCULAR SAWS: *F. Gruban.*—The side of the wood is pressed against by the feed-roller, which is carried upon the lower end of a vertical axis that is turned with bevel-gearing, and an axis passed through a radial arm from another vertical axis carried by a pedestal attached to the saw-bench and driven with toothed gearing and a belt from the saw spindle. A screw serves for adjusting the length of the radial arm, whilst the axis that is passed through the radial arm slides lengthwise in a pinion. The feed-roller can be set anglewise by turning it about that axis.

4,181.—AN ADJUSTABLE HINGE FOR GATES, DOORS, &C.: *H. A. Eckley and F. Frankham.*—Two pieces constitute that part of the hinge which is clamped on to the foot of the gate-post, and sliding cross-pieces are clamped together in position with a bolt for the adjustment at any distance desired of the jaws which clamp the gate-post. Slotted holes in the jaws admit of the gate being lifted after it has dropped, and there are slots in the jaws and post through which the bolt is passed. In some instances the upper hinge may also be rendered adjustable in the manner described.

4,220.—PIPE-WRENCHES AND SIMILAR TOOLS: *F. H. Condy.*—The jaws are fashioned in one piece with the handles, that are pivoted together with bolts inserted through plates and with a lug that engages with a notch, whilst a sliding-piece fitted with a set-screw holds the handles asunder; a projection from the one jaw fits into a groove cut in the serrated piece, and in one shape the serrated piece or jaw becomes wedged into its place more firmly by means of the action of the projection, which is formed dovetailed in section and tapered lengthwise. The invention includes other modes of keeping the jaws held in position.

4,237.—A COMBINED STRAIGHT-EDGE AND RULE: *T. Berry.*—The two portions of the rule are hinged together so that they can form a square by being set at a right angle, a spring at the hinge keeping them in the position desired; upon one of the arms is mounted a level protected with a shield.

4,244.—THE HARDENING OF BLOCKS MADE OF ARTIFICIAL STONE: *R. Fimmen.*—The hardening chambers are mounted upon trolleys that run upon rails, and clamps secure their removable ends; the pierced steam-pipe is affixed beneath the table upon which the blocks are stacked, and the exhaust steam is conducted from the dome to another hardening chamber; the chambers are run away upon rails when the process has been completed.

4,388.—DRAWING COMPASSES: *E. Boden.*—Screws are used for pivoting the legs in a forked socket, and links join them to the handle which slides within the socket, space being given for the links by means of recesses cut in those parts of the compasses.

4,453.—JUNCTIONS FOR DRAIN AND OTHER PIPES: *F. J. Robins.*—For facilitating the joining of lengths of pipes they are fashioned with flanges (to be fastened with rivets or bolts) that are formed on to a flared-out portion at one end and on to the socket at the other end; the flange at the spigot end of the adjacent length fits into a recess, and the joint is tightened with caulking.

4,460.—ALARMS—FIRE AND BURGLARY: *F. W. Skinner.*—A liquid is filled into the upper one of the two divisions of a reservoir which is carried upon trunnions so that it shall retain a check pawl in gear with the clockwork. With a reduction of the air-pressure in the other and lower division, the liquid will flow through a siphon from the upper division into the lower one, and as the reservoir thereby turns into a vertical position, it liberates the check pawl and sets the clockwork in motion and causes it to turn the arms, upon which are mounted two spring-supported balls which forthwith strike the alarm bell. For the bell may be substituted an electrical bell and the clockwork can be arranged for closing circuit. For a fire-alarm, the pressure in the lower compartment of the reservoir is reduced by means of a piston which a cylinder will draw down as the contained volatile liquid becomes heated, whilst for a burglary-alarm a rod, that is joined to a door or window, is adopted for drawing down the piston.

4,470.—CUTTERS FOR WORKING STONE: *H. Koch.*—By this contrivance a stone-planing machine cutter can be ground upon the machine; bearings upon the cutter-frame hold a shaft upon which are mounted the grinding disc and its pulleys, a holder and blocks or brackets on the table hold the cutter which the table feeds beneath the grinder.

4,495.—COVERINGS FOR WALLS AND CEILINGS: *F. R. Nesbitt.*—Raised ribs that will register with one other as the sheets are laid side by side are embossed or otherwise formed upon sheets of some ornamental material, the ribs have recesses at the joinings of the sheets which take ornamental cone-shaped plugs or buttons to which pins or spikes are affixed.

4,498.—BUTT-AND-FLANGE JOINTS: *A. Barr.*—The invention relates to a coupling for pipes of metal and articles of some such fragile substance as pottery or glass; an india-rubber or other soft piece is fitted on to the pipe or nozzle which is swelled out at its ends, the flanged pipe is joined by drawing the glands or collars together with bolts, one collar may be secured to the flanged pipe, and a separate packing ring can be used between the pipe ends.

4,510.—PARQUETRY FLOORING: *C. Schultze and A. Hartmann.*—Boards or planks, having the annual growth-rings or end-grain exposed for the wearing surface, are made by fastening battens and cubes together; the boards are steeped in linseed oil, and are either secured in position with spikes or loosely laid down upon the girders or joists.

4,533.—A MACHINE FOR PLANING OR FRENCH-POLISHING WOOD: *W. Kerr.*—A slide, which is reciprocated by a crank-disc and a connecting-rod, takes the wood between its two stops; in the case of planing, the wood, as it is moved in one direction, is planed with a hand-plane which is held against a stop-bar; for French polishing the stop-bar is discarded and the workman presses the polishing pad against the board as it is being reciprocated; a radial slot serves for the necessary adjustment of the crank-pin.

4,537.—A BASCULE LIFT-BRIDGE: *F. P. Cowing.*—The axle of each span is adapted to turn in bearings secured to a very strong framework which rests either directly upon the pier or upon a cradle; on the bearing surface of the cradle is a set of rollers, and the larger portion of each roller receives the pressure of the bearing surface of the span; side-plates join the rollers, which are also guided by flanges on the back that is affixed to the bearing surface and is worked with a pinion; a counter-weight is supplied, and an adjustable piece secured to the cradle takes the lower part of the span.

4,552.—JOINTS FOR PIPES: *S. R. Dresser.*—In the case of a spigot and socket joint one section of the pipe is flared at its end in order that it may take a bead upon the other section. The coupling-ring that fits against the bead is tightened with bolts to another ring, whilst a recess in the coupling-ring receives the packing-ring. In a variant shape both the pipes have beads, and coupling-rings bolted together keep a sleeve and the packing-rings in position. For wrought-iron pipes the coupling-rings are not split, and when they have been put around the pipes the beads are spun or formed upon the pipes.

4,567.—A CRAMP FOR WOOD-WORKERS' USE: *F. W. Phillips.*—Two jaws that slide between parallel bars are fixed to cross-bars, one jaw is adjusted with a screw and the other jaw with a pawl that engages with teeth upon the middle bar or otherwise; the base of one jaw is passed underneath the middle bar, bearing against it as pressure is employed, so as to relieve the strain upon the pawl and other portions of the tool.

4,570.—AN APPLIANCE FOR USE WITH CRANES; *W. H. Vaughan and T. Foster.*—For the automatically stopping apparatus of overhead cranes worked with electricity a single-toothed pinion is mounted upon the axle of the barrel of the crane, so that it shall drive a wheel, of which the projecting pin and roller will impinge against and work the cut-out lever in the event of the rope being overwound.

MEETINGS.

SATURDAY, JULY 6.

Institution of Junior Engineers.—Visit to the Staines Reservoirs Works, under the guidance of the joint engineers, Messrs. Walter Hunter and R. E. Middleton, MM.Inst.C.E. Train leaves Waterloo (South-Western Railway) at 1.25 p.m.

St. Paul's Ecclesiological Society. — Visit to the Church and Ancient Rectory House of Southfleet. Train leaves Holborn at 2.25 p.m.

Northern Architectural Association. — Annual excursion, Edinburgh.

MONDAY, JULY 8.

Clerks of Works Association. — (Monthly meeting, Carpenters' Hall). 7.30.

TUESDAY, JULY 9.

British Association of Waterworks Engineers. — Annual general meeting, to be held at Birkenhead.

WEDNESDAY, JULY 10.

British Association of Waterworks Engineers. — Annual general meeting (continued).

THURSDAY, JULY 11.

British Association of Waterworks Engineers.— Annual general meeting (continued).

FRIDAY, JULY 12.

British Association of Waterworks Engineers.— Annual general meeting (concluded).

SATURDAY, JULY 13.

Architectural Association. — Visit to Medmenham Abbey, &c., and "Danesfield," Great Marlow, by permission of the architect, Mr. W. H. Romaine-Walker.

Institution of Junior Engineers.—Visit to the Millwall Lead Works. 3 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 15.—By EDWARD BOND (at Aylesbury).

Waddesdon, Bucks.—Blackington Ground and Cowley's enclosure, 19 a. 0 r. 23 p., f.	£1,150

June 21.—By EDWARD BOND (at High Wycombe).

Princes Risborough, Bucks.—Speen Farm, 145 a. 0 r. 27 p., f.	1,750

By G. B. HILLIARD & SON (at Chelmsford).

Great Baddow, Essex.—Carlton Villa and 13 a. 1 r. 12 p., f.	1,180
A freehold cottage and garden	115

June 22.—By JOHN E. EVANS (at Stafford).

Doxey, Staffs.—Aston Farm, 128 a. 2 r. 15 p., f.	4,000

June 24.—By BRACKETT & SON.

Tunbridge Wells, Kent.—Rusthall Common, a plot of building land, area ¼ acre, f.	150
Nevill Park, Sandfield and 2 a., u.t. 53 yrs., g.r. 30*l.*, r. 230*l.*	3,500

By CHANCELLOR & SONS.

Putney.—18 and 19, Stratford-grove, u.t. 48½ yrs., g.r. 6*l.*, r. 54*l.*	365

By DAVID J. CHATTELL.

Chislehurst, Kent.—Mead-rd., a plot of building land, area ¼ a., f.	400
Twickenham.—Ailsa-rd., an enclosure of land, 0 a. 3 r. 24 p., f.	850

[*See also next page.*

By A. P. CLEAR.
Mayland, Essex.—Nipsell's Farm, 613 a. 3 r. 30 p., f. £3,900
By H. J. CHEFFINS.
Debden, Essex.—New Amberden Hall Farm, 129 a. 2 r. 33 p., f. 2,050
Purleigh, Essex.—Dyegood's Farm, 123 a. 2 r. 38 p., f. 1,380
By EASTMAN BROS.
Sydenham.—Silverdale, Farleigh, f., e.r. 85*l.* 1,375
Forest Hill.—2, Church-rd., u.t. 68 yrs., g.r. 14*l.*, r. 60*l.* 400
By GIDDY & GIDDY.
Pinkney's Green, Berks. — Ditton House and 20 a., f. 10,700
By NEWMAN & NEWMAN (at Bourton-on-Water).
Turkdean, Glos.—Drapers House and 2 a. 1 r. 22 p., f. 175
June 25.—By ALCE & HARTLEY.
Chiswick.—The Avenue, Erpingham, f. 2,000
Southall, Middx.—Grove House and 1 a., f., e.r. 90*l.* 1,500
By PERCY H. CLARKE.
Hadley Woods, Middx.—Camlot Way, freehold building land, 4 a. 4,000
By DEBENHAM, TEWSON & CO.
Chelsea.—2, 3, 4 and 5, Caroline-pl., f. 1,340
By HAMPTON & SONS.
Wincanton, Somerset.—New Barn Farm, 121 a. 3 r. 35 p., f. 5,500
By MARK HUBBARD.
Kentish Town.—31 to 37 (odd), Dartmouth Pk.-rd., u.t. 61 yrs., g.r. 33*l.* 12s., r. 210*l.* 2,000
York-rise, a plot of land, with shed thereon, u.t. 61 yrs., g.r. 1*l.*, r. 15*l.* 225
By MAPLE & CO.
Hampstead-rd.—37, Oakley-sq., u.t. 53 yrs., g.r. 23*l.*, r. 65*l.* 400
By MORLEY PHILLIPS, SONS, & MARTIN.
Blackheath.—54, Tranquil-vale, u.t. 82 yrs., g.r. 20*l.*, r. 80*l.* 590
Bermondsey.—7 and 9, Alscot-rd., u.t. 20 yrs., g.r. 5*l.* 16s. 8d. 330
By ROGERS, CHAPMAN & THOMAS.
Belgravia.—15, Lowndes-st., u.t. 27½ yrs., g.r. 5*l.*, r. 150*l.* 1,860
By G. TROLLOPE & SONS.
Pall Mall.—24, Carlton House-ter., u.t. 25 yrs., g.r. 30*l.* 2s. 6d.
Trafalgar-sq.—5, St. Martin's-mews, u.t. 25 yrs., g.r. 15*l.* 15s. } 13,000
By WALTON & LEE.
Mayfair.—17A, 19, and 22, South Audley-st., and 35A, South-st., u.t. 74 yrs., g.r. 400*l.*, r. 1,360*l.* 12,600
Lindfield, Sussex.—The Sunte Estate, 184 a. 2 r. 28 p., f. 18,000
Enclosures of land, 25 a. 2 r. 16 p., f. 3,250
Oak Cottage and 0 a. 1 r. 36 p., f. 330
Little Sunte Holding, 0 a. 2 r. 38 p., f. 450
Wraysbury, Bucks.—Hythe End-lane, two blocks of freehold building land, 8 a. 0 r. 17 p. 860
By FREDK. WARMAN.
Canonbury.—85 and 87, Marquis-rd., u.t. 45 yrs., g.r. nil, e.r. 140*l.* 1,200
Highbury.—30, Highbury-hill, u.s. 56 yrs., g.r. 19*l.* 10s. 1,030
Islington.—34, Britannia-row, c., e.r. 30*l.* 300
By ALFRED RICHARDS (at Tottenham).
Tottenham.—112 and 114, Northumberland Park, f., r. 64*l.* 990
Northumberland Park, a block of freehold building land 1,500
24, Northumberland-grove, u.t. 49 yrs., g.r. 4*l.* 10s., r. 19*l.* 170
Markfield-rd., a freehold building plot 100
61 and 63, Somerset-rd., f. 530
By HEPPER & SONS (at Leeds).
Leeds.—8, Lower Head-row and 1, Atkinson's-court, area 478 yds., f., r. 170*l.* 4,250
Joseph-st., the Hunslet Shed Works, area 2,300 yds., f. 2,760
Shadwell, Yorks.—Beachwood Farm, 14 a. 3 r. 35 p., f. 1,200
June 26.—By DYER, SON, & HILTON.
Eltham, Kent.—Grove Pk.-rd., a block of freehold building land 1,300
Blackheath.—98, Shooters' Hill-rd., u.t. 58½ yrs., g.r. 9*l.*, r. 55*l.* 450
Lewisham.—27, Lewisham Pk., u.t. 73 yrs., g.r. 9*l.* 750
By HY. HOLMES & CO.
Euston-rd.—7, 9, and 11, Stanhope-st., and 28, Seaton-st., u.t. 10¼ yrs., g.r. 145*l.* 450
By E. HOLSWORTH.
Victoria Pk.—1 and 2, Comboss-rd., u.t. 60 yrs., g.r. 9*l.* 9s. 375
Shoreditch.—1, Strout's-pl., f. 280
By MANSELL & ROWE.
Norwood.—8, Farquhar-rd., u.t. 35½ yrs., g.r. 15*l.* 12s. 6d., r. 85*l.* 825
By OGDEN, SONS, & OLLEY.
Wimbledon.—13, Pepy's-rd., u.t., 90 yrs., g.r. 10*l.*, r. 40*l.* 400
25 and 27, Palmerston-rd., f. 660
Ridley-rd., a plot of building land, f. 180
By ALFRED RICHARDS.
Tottenham.—837, High-rd., f., r. 30*l.* 630
By WALTER SIMMONDS.
Camberwell.—75, Crofton-rd., u.t. 65½ yrs., g.r. 6*l.* 6s., r. 36*l.* 340
By R. TIDEY & SON.
Canonbury.—11, Marquis-rd., u.t. 44 yrs., g.r. 10*l.*, e.r. 70*l.* 550
By DOUGLAS YOUNG & CO.
Pimlico.—39, Hanover-st., u.t. 23¾ yrs., g.r. 7*l.* 7s., r. 52*l.* 10s. 390
Paddington.—12, Newton-rd., u.t. 19 yrs. g.r. 8*l.* 8s., r. 55*l.* 250
35, Sutherland-pl., u.t. 44¾ yrs., g.r. 10*l.* 10s., r. 50*l.* 370
Pentonville.—40, 48, and 50, Great Percy-st., u.t. 15¾ yrs., g.r. 22*l.*, r. 150*l.* 785
2 and 3, Upper Baker-st., u.t. 10¾ yrs., g.r. 10*l.*, r. 78*l.* 250
De Beauvoir Town.—4 and 6, Church-rd., u.t. 11¼ yrs., g.r. 9*l.*, r. 78*l.* 335
Brixton.—174, Loughborough-rd, r. 36*l.*; also i.g.r.'s 26*l.*, u.t. 20¾ yrs., g.r. 34*l.* 235
1 and 3, Millbrook-rd., u.t. 20¾ yrs., g.r. 10*l.*, r. 60*l.* 320
South Lambeth.—Mawbey-st., f.g.r.'s 88*l.*, reversion in 60 yrs. £2,374
By WYATT & SON (at Chichester).
Singleton, Sussex.—A freehold shop, two cottages, store, &c. 400
A freehold shop, cottage, and meadow 255
By LOUND & HOWITT (at Horseshoe Hotel).
Clapham.—The Common, The Windmill p.-h., a building lease of 50 yrs., r. 500*l.*, with goodwill 4,500
By HEPPER & SONS (at Boston Spa).
Boston Spa, Yorks.—High-st., The Beeches and 2 a. 0 r. 29 p., f. 1,330
High-st., Low Ox Close, 2 a. 2 r., f. 350
By HEPPER & SONS (at Leeds).
Leeds.—61 and 63, Whitehouse-st., and 22, Turkey st., f. 600
By BIDDELL & BLENCOWE (at Bury St. Edmunds).
Whepstead, Suffolk.—Whepstead Hall and New House Farms, 441 a. 3 r. 26 p., f. 5,350
Wattisham, &c., Suffolk.—The Wattisham Estate, 221 a. 1 r. 27 p., f. and c. 2,323
Great Bricett, &c., Suffolk.—The Bricett Estate, 182 a. 3 r. 36 p., f. and c. 1,775
June 27.—By H. J. BLISS & SONS.
Woolwich, Kent.—Beresford-st., f.g.r.'s 26*l.*, reversion in 22 yrs. 1,290
Beresford-st., f.g.r. 58*l.*, reversion in 22 yrs. 2,150
Beresford-st., f.g.r. 12*l.* 7s. 6d., reversion in 38 yrs. 345
Beresford-st., f.g.r.'s 29*l.* 5s. 3d., reversion in 22 yrs. 1,205
By DEBENHAM, TEWSON, & CO.
South Kensington.—26, Egerton-cres., u.t. 26 yrs., g.r. 10*l.* 1,410
By H. DONALDSON & SON.
Bishopsgate.—5 to 14, New-st., f. 5,000
Mile End.—39, 41, and 43, Willow-st., u.t. 29 yrs., g.r. 6*l.* 715
By E. M. DUNCOMBE.
Brompton.—1 to 6, Middle-st., u.t. 24½ yrs., g.r. 27*l.* 630
By G. H. MASTERMAN & CO.
Highgate.—Merton-lane, Merton Lodge and over 2 a., f., r. 250*l.* 5,200
By MAY & PHILPOT.
Clapham.—South-rd., Ben Omar and 1 a., f. 2,500
Brixton.—87, St. James-rd., u.t. 61½ yrs., g.r. 8*l.* 10s. 595
By C. C. & T. MOORE.
Hackney-rd.—173, Gt. Cambridge-st.; also Kent Wharf, f., r. 150*l.* 3,350
53 to 59 (odd), Holms-st., area 5,200 ft., f. 1,910
Hackney.—11 to 17, Exmouth-pl., f.; 18, Exmouth-pl., area 2,200 ft., f., r. 45*l.* 2,250
Haggerston.—58, Moye-st., and 25 and 26, Talavera-pl., f. 750
Mile End.—470, 474, 476, and 478, Mile End-rd., f., r. 144*l.* 2,820
Loughton.—High-rd., Osborn House and 2 a., f. 1,800
Bethnal Green.—19 to 27 (odd), Granby-st., u.t. 17¼ and 20½ yrs., g.r. 32*l.* 270
Chelsea.—110, Cheyne-walk, f., e.r. 60*l.* 1,000
By NEWBON, EDWARDS, & SHEPHARD.
Pentonville.—4, 6, and 7, Lloyd-sq., u.t. 16 yrs., g.r. 18*l.*, r. 146*l.* 800
Canonbury.—39, Alwyne-rd., u.t. 44 yrs., g.r. 10*l.*, e.r. 65*l.* 470
By NOTLEY & CO.
Stockwell.—Binfield-rd., Berkeley House, u.t. 35 yrs., g.r. 20*l.* 1,000
Clapham.—12, Rusham-rd., f., r. 45*l.* 800
By STIMSON & SONS.
Lambeth.—27 and 28, Lower Marsh, f. 2,260
South Lambeth.—167 to 175 (odd), South Lambeth-rd. (one with off-licence), u.t. 45 yrs., g.r. 36*l.*, r. 340*l.* 3,740
Balham.—Boundaries-rd., Cecil House, u.t. 95 yrs., g.r. 6*l.* 6s., e.r. 36*l.* 330
Mile End.—1, Cornwall-rd., and 1, 2, and 3, Cornwall-sq., f. 745
Bermondsey.—122, Spa-rd., area 30,500 ft., f.r. 415*l.* 7,750
Spa-rd., The Crown p.-h. and plot of land in rear, f., r. 75*l.* 3,370
Dunlop-pl., freehold manufacturing premises, area 39,000 ft., r. 350*l.* 5,450

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent yd. for yard.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 14 0	per 1,000 alongside, in river.
Rough Stocks and Grizzles	1 11 0	" " "
Facing Stocks	2 12 0	" " "
Shippers	2 8 0	" " "
Flettons	1 8 6	" at railway depot
Red Wire Cuts	1 14 6	" " "
Best Fareham Red	3 11 0	" " "
Best Red pressed Ruabon Facing.	5 5 0	" " "
Best Blue Pressed Staffordshire	4 4 6	" " "
Do., Bullnose	4 9 0	" " "
Best Stourbridge Fire Bricks	4 2 6	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	17 0 0	" " "
Double Stretchers	19 0 0	" " "

PRICES CURRENT (*Continued*).

BRICKS, &c.

	£ s. d.	
Double Headers	16 0 0	per 1,000 at railway depôt.
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamfered, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
plays, Chamfered, Squints	14 0 0	" " "
Seconds Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand	7 3	per yard, delivered.
Thames Ballast	6 0	" "
Best Portland Cement	35 0	per ton, delivered.
Best Ground Blue Lias Lime	25 6	" "

NOTE.—The cement and lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 12s 6d. per yard, delivered
Stourbridge Fire-clay in sacks, 28s. od. per ton at rly. dpt.

STONE.

	s. d.	
Ancaster in blocks	2 0	per ft. cube, deld. rly. depôt.
Bath "	1 7	" "
Farleigh Down Bath	1 8	" "
Beer in blocks	1 6½	" "
Grinshill "	1 10	" "
Brown Portland in blocks	2 2	" "
Darley Dale in blocks	2 1½	" "
Red Corsehill "	2 5	" "
Red Mansfield "	2 4½	" "
Hard York in blocks	2 10	" "
Hard York 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	2 8	per ft. super. at rly. depôt
" " 6 in. Rubbed Ditto	3 0	" "
" " 3 in. sawn both sides slabs (random sizes)	1 3	" "
" " 2 in. self-faced Ditto	0 9½	" "
Hopton Wood (Hard Bed) in blocks	2	3 per ft. cube. deld. rly. depôt.
" " " 6-in sawn both sides landings	2	7 per ft. super. deld. rly. depôt.
" " " 3-in. do.	1 2½	" "

SLATES.

in. in.	£ s. d.	
20×10 best blue Bangor	11 5 0	per 1000 of 1200 at ry. dep.
" best seconds "	10 15 0	" "
16× 8 best "	6 2 6	" "
20×10 best blue Portmadoc	10 18 0	" "
16× 8 best blue Portmadoc	6 0 0	" "
20×10 best Eureka unfading green	11 2 6	" "
16× 8 " "	6 15 0	" "
20×10 Permanent green	10 0 0	" "
16× 8 " "	5 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	41 6	per 1,000 at rly. depôt.
Hip and valley tiles	3 7	per doz. " "
Best Broseley tiles	48 6	per 1,000 " "
Hip and valley tiles	4 0	per doz. " "
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000 " "
Do. ornamental Do.	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 9	" " "
Best Red or Mottled Staffordshire Do. (Peakes)	50 9	per 1,000 " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 10 0	16 10 0
Deals: best 3 by 9	13 10 0	14 10 0
Battens: best 2½ in. by 7 in. and 8 in. and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals seconds	1 0 0	less than best
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	10 10 0
2 in. by 4½ in. and 2 in. by 5 in.	9 0 0	10 0 0
Foreign Sawn Boards— 1 in. by 1½ in. by 1½ in.	0 10 0	more than battens.
¾ in.	1 0 0	more than battens.
Fir timber: Best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Swedish balks	2 15 0	3 0 0
Pitch pine timber (35 ft. average)	3 0 0	3 10 0

JOINERS' WOOD.

	At per standard.	
White Sea: First yellow deals, 3 in. by 11 in.	25 0 0	26 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens, 2½ in. and 3 in. by 7 in.	19 0 0	20 0 0
Second yellow deals, 3 in. by 11 in.	20 0 0	21 0 0
3 in. by 9 in.	19 0 0	20 0 0
Battens, 2½ in. and 3 in. by 7 in.	15 0 0	16 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 0 0	16 0 0
Battens, 2½ in. and 3 in. by 7 in.	12 0 0	12 10 0

PRICES CURRENT (*Continued*).

WOOD.

	At per standard. £ s. d.	£ s. d.
Petersburg: first yellow deals, 3 in. by 11 in.	22 0 0	23 0 0
Do. 3 in. by 9 in.	19 0 0	20 0 0
Battens	14 10 0	15 10 0
Second yellow deals, 3 in. by 11 in.	16 10 0	17 10 0
Do. 3 in. by 9 in.	15 0 0	16 0 0
Battens	12 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 10 0
Do. 3 in. by 9 in.	13 0 0	13 10 0
Battens	11 10 0	12 0 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	15 0 0	16 0 0
" " 3 in. by 9 in.	14 0 0	15 0 0
Battens	12 0 0	13 0 0
Second white deals 3 in. by 11 in.	14 0 0	15 0 0
" " " 3 in. by 9 in.	13 0 0	14 0 0
" " battens	10 10 0	11 10 0
Pitch pine: deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—		
First, regular sizes	30 0 0	33 0 0
Broads (12 in. and up)	2 0 0	more.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—		
Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 2 6	0 3 0
Small " "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 7
in. do. do.	0 0 7	- - -
Dry Mahogany—		
Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 0 0	20 0 0
American Whitewood Planks—		
Per ft. cube	0 3 0	0 3 6
Prepared Flooring—	Per square	
1 in. by 6 in. and 7 in. yellow, planed and shot	0 13 0	0 16 6
1 in. by 6 in. and 7 in. yellow, planed and matched	0 13 6	0 17 6
1¼ in. by 6 in. and 7 in. yellow, planed and matched	0 16 0	1 1 0
1 in. by 6 in. and 7 in. white, planed and shot	0 11 0	0 13 0
1 in. by 6 in. and 7 in. white, planed and matched	0 11 6	0 13 6
1¼ in. by 6 in. and 7 in. white, planed and matched	0 14 0	0 16 6

JOISTS, GIRDERS, &c.

	In London, or delivered to Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	8 0 0
Compound Girders " "	9 0 0	10 5 0
Angles, Tees and Channels, ordinary sections	8 17 6	10 17 6
Flitch Plates	9 0 0	9 15 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 5 0	9 0 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON.—		
Common Bars	8 0 0	8 10 0
Staffordshire Crown Bars, good merchant quality	8 10 0	9 0 0
Staffordshire "Marked Bars"	10 10 0	- - -
Mild Steel Bars	9 0 0	9 10 0
Hoop Iron, basis price	9 5 0	9 15 0
" " galvanised	16 0 0	- - -
(* And upwards, according to size and gauge.)		
Sheet Iron, Black.—		
Ordinary sizes to 20 g.	10 0 0	- - -
" " to 24 g.	11 0 0	- - -
" " to 26 g.	12 10 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality.—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0	- - -
" " 22 g. and 24 g.	13 0 0	- - -
" " 26 g.	14 0 0	- - -
Sheet Iron, galvanised, flat, best quality.—		
Ordinary sizes to 20 g.	16 10 0	- - -
" " 22 g. and 24 g.	17 0 0	- - -
" " 26 g.	18 10 0	- - -
Galvanised Corrugated Sheets.—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	12 10 0	- - -
" " 22 g. and 24 g.	13 0 0	- - -
" " 26 g.	14 0 0	- - -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12 5 0	- - -
" " 22 g. and 24 g.	13 5 0	- - -
" " 26 g.	14 5 0	- - -
Cut nails, 3 in. to 6 in. (Under 3 in. usual trade extras.)	9 10 0	10 0 0

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3 lbs. & up.	15 5 0	- - -
Pipe in coils	15 15 0	- - -
Soil Pipe	18 5 0	- - -
ZINC—Sheet—		
Vieille Montagne ton	24 0 0	- - -
Silesian	23 10 0	- - -
COPPER—		
Strong Sheet per lb.	0 1 0½	- - -
Thin "	0 1 2	- - -
Copper nails "	0 1 2	- - -
BRASS—		
Strong Sheet "	0 0 11	- - -
Thin "	0 1 1	- - -
TIN—English Ingots "	0 1 5	- - -
SOLDER—Plumbers' "	0 0 7	- - -
Tinmen's "	0 0 8	- - -
Blowpipe "	0 0 9	- - -

PRICES CURRENT (*Continued*).

PLASTER, &c.

	s. d.	
Coarse Plaster	30 0	per ton delivered.
Fine "	38 0	" "
Coarse Keenes and Parian cement	51 6	" "
Fine do. do.	59 6	" "
Robinson's Fireproof Cement	51 6	" "
Do. Finishing " (Exclusive of the ordinary charge for sacks.)	56 6	" "
Whiting	30 0	" "

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	3d. per ft. delivered.
" " fourths	2¾d. " "
21 oz. thirds	3¾d. " "
" " fourths	3¼d. " "
26 oz. thirds	5d. " "
" " fourths	4½d. " "
32 oz. thirds	6d. " "
" " fourths	5½d. " "
Fluted sheet, 15 oz.	3½d. " "
" " 21 "	4½d. " "
½ Hartley's Rolled Plate	3d. " "
⅝ " " "	3½d. " "
¾ " " "	4d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 10
" " " in barrels	"	0 2 11
" " " in drums	"	0 3 1
Boiled " " in pipes	"	0 3 0
" " " in barrels	"	0 3 1
" " " in drums	"	0 3 3
Turpentine, in barrels	"	0 2 4
" in drums	"	0 2 6
Genuine Ground English White Lead	per ton	23 0 0
Red Lead, Dry	"	24 0 0
Best Linseed Oil Putty	per cwt.	0 9 0
Stockholm Tar	per barrel	1 10 0

VARNISHES, &c.

	per gallon £ s. d
Fine Elastic Copal Varnish for outside work	0 16 6
Best Elastic Copal Varnish for outside work	1 0 0
Best Elastic Carriage Varnish for outside work	0 16 6
Best Hard Oak Varnish for inside work	0 10 6
Best Extra Hard Church Oak Varnish for inside work	0 10 6
Fine Hard Copal Varnish for inside work	0 16 0
Best Hard Copal Varnish for inside work	1 0 0
Best Hard Carriage Varnish for inside work	0 16 0
Extra Pale Paper Varnish	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 9 0
Berlin Black	0 15 0
Knotting	0 10 0
Best French and Brush Polish	0 10 0

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are **NOT DESIRED.**

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to **THE PUBLISHER**, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of tenders accepted unless the amount of the tender is given, nor any list in which the lowest tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BANBURY.—For the erection of school buildings, Britannia-road. Mr. W. F. Bird, architect, Midsomer Norton, Somerset. Quantities by the architect:—

Kingerlee & Sons	£5,150 0 0	Kimberley	£5,022 0 0
Bloxham	5,099 0 0	J. F. Booth	5,000 0 0
Grant & Son	5,079 17 0	W. J. Harding	4,786 12 6
		Orchard & Son	4,725 0 0

BARNSLEY.—For the erection of twenty-five houses, &c., near Little Houghton, for the Houghton Main Colliery Company, Limited. Mr. W. J. Sykes, architect, Hoyland, near Barnsley:—

Masonry, &c.	
Wm. Johnson, Wombwell, near Barnsley*	£3,169 0 0
Joinery, &c.	
James Taylor, Darfield, near Barnsley*	935 0 0
Slating and Plastering.	
M. Fleming, Eastgate, Barnsley*	701 0 0
Plumbing and Glazing.	
W. H. Rawlin, Hoyland, near Barnsley*	173 19 0
Painting.	
F. C. Wilson, Wombwell, near Barnsley*	92 0 0
Total	£5,071 8 0

BATLEY (Yorks).—For the erection of a long wooden bridge, Wellington street, for the Town Council. Mr. O. J. Kirby, C.E., Town Hall, Batley. Quantities by the Engineer:—

T. E. Sugden	£250 0	Akeroyd & Son	£199 0
H. Brook	245 0	Chadwick & Sons, Batley*	189 10

[Engineer's estimate £180.]

BIRMINGHAM.—For the erection of thirty-seven artisans' dwellings near Cannon Hill Park, Birmingham, for Messrs. Freeman, Thomas, & Elsmore. Mr. W. J. Ballard, architect, Willous-road, Birmingham:—

Hughes & Son	£9,050 0	C. R. Webb	£8,283 0
R. Rutty	8,510 0	W. C. Channing	7,972 0
Cragg & Co.	8,454 10	H. S. Bevins*	7,585 0

For Manholes and Main Drain for the Above.

Abel Cooper	£225 0 0	Geo. Trentham	£137 7 0
John White, jun.	200 0 0	S. Woods*	131 2 3
Channing & Co.	198 10 0		

CORK.—For stabling in Bishop-street, Cork, for Messrs. Beamish & Crawford, Limited, brewers, Cork. Messrs. Houston & Houston, architects, 5, York-buildings. Adelphi, W.C. Quantities by Mr. A. E. McEwan Waghorn, surveyor, 10, Craig's court, Charing Cross, S.W.:—

E. & P. O'Flynn	£7,830	John Lisk	£6,200
J. & P. Good, Ltd.	7,150	Samuel Hill*	6,035
Delaney & Co.	6,694		

EWELL.—For a small summer residence at Ewell, Surrey, for Mr. Ambrose Paterson. Mr. H. G. Quartermaine, architect, Merton:—

Jones & Son	£1,467	Newton & Co.	£1,205
Price & Price	1,350	Jas. Burges & Son	1,185
C. King & Son	1,263	Rice	1,125
Battley, Son, & Holness	1,255		

LONDON.—For the erection of two small houses in Upper Tooting-park, S.W. Mr. William Hunt, architect, Donington House, Norfolk-street, Strand, W.C.:—

W. & C. Brown, 1, Inman-road, Wandsworth* (tender on amended plans) £1,616

LONDON.—For repainting the ironwork and woodwork of the bridges and pontoons at Woolwich Ferry, for the London County Council:—

J. F. Holliday	£2,153 4 5!	A. H. Inns	£984 6 0
W. R. Athey	1,311 15 11	H. C. Horswill	926 0 0
E. Proctor	1,099 0 0	Vigor & Co.*	786 5 7!

LONDON.—For the erection of a chimney shaft, for the Guardians of the Greenwich Union. Mr. L. Jacob, architect and surveyor, Globe Chambers, 493, New Cross-road, S.E.:—

A. Wilson	£357 11 7	W. Martin	£255 0 0
E. Mills	277 0 0	W. Mills	253 0 0
W. Nash	275 0 0	H. Groves	223 0 0
H. L. Holloway	267 0 0	Hall Bros.	177 0 0
Neil & Co.	260 0 0		

LONDON.—For sewerage work, Page's-lane, Muswell Hill, for the Hornsey District Council. Mr. E. J. Lovegrove, Engineer and Surveyor:—

Myers, Gilson, & Rose, Ltd.	£517 3 3	S. Saunders	£420 0 0
J. A. Dunmore	458 2 5	Williamson & Sons, Ltd., Finsbury Pk., N.*	350 17 7
E. T. Bloomfield	448 11 0		
Thos. Adams	444 3 11		

LONDON.—For the making up of Priory-avenue, for the Hornsey District Council. Mr. E. J. Lovegrove, Engineer and Surveyor:—

E. T. Bloomfield	£1,388 19 10	Wallace & Inns	£1,212 11 6
Griffiths & Co., Ltd.	1,320 14 0	J. A. Dunmore	1,181 9 10
Williamson & Sons, Ltd.	1,313 14 11	Thomas Adams, Wood Green, N.*	1,176 2 11
Myers, Gilson, & Rose, Ltd.	1,232 19 9		

LONDON.—For making up of Eastwood-road, for the Hornsey District Council. Mr. E. J. Lovegrove, Engineer and Surveyor, Hornsey District Council:—

E. T. Bloomfield	£671 17 11	Myers, Gilson, & Rose, Ltd.	£602 6 4
Griffiths & Co., Ltd.	659 3 4	Thomas Adams	596 2 8
J. A. Dunmore	640 2 8	Wallace & Inns, Hornsey Railway Station, N.*	584 4 5
Williamson & Sons, Ltd.	631 5 6		

REDHILL.—For additions and alterations to Holly Bank, Red Hill, for Mr. G. W. Peat. Mr. C. E. Salmon, architect, Bell-street, Reigate:—

Buckland & Waters	£298	G. Martin, Red Hill*	£284
Nightingale & Sons	289		

TYLORSTOWN (Glam).—For the erection of three houses for Mr. D. Evans, Duke of York Hotel. Messrs. Griffith & Jones, architects, Tonypandy & Cardiff:—

Morris Morris, Ferndale, nr. Pontypridd* £632

WORKSOP.—For the erection of new workhouse infirmary, for the Guardians of the Worksop Union. Mr. Herbert C. Scaping, architect, Grimsby. Quantities by Mr. J. Watson, Hull:—

Thos. Roper	£19,949 10 0	G. G. Middleton	£15,950 0 0
J. G. Cooling	17,880 14 6	Cooper & Son, Ltd.	15,616 0 0
Brown & Son	17,400 0 0	Gill, Dennis, & Son	15,577 0 0
Longden & Son	17,020 12 6	J. H. Vickers, Ltd.	15,490 0 0
Wm. Hall	16,980 0 0	A. B. Clarke, Nottingham*	14,500 0 0
Hy. Vickers	16,900 0 0		
Cahill & Leverton	16,494 0 0		
Robt. Stewart	16,130 0 0		
M. Grantham	16,100 0 0		

[*See also nex page.*

CONTRACTS AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Road Stone (4,500 tons)	Leamington Corporation	H. C. Passman, Town Hall, Leamington	July 8
Well Sinking	Strabane (Ireland) R.D.C.	J. E. Sharkie, Council Offices, Strabane	July 9
Art Gallery and Library Extension	Rochdale Corporation	J. Horsfall, Architect, Todmorden	do.
Building Works at Cattle Market	Newbury Town Council	S. J. L. Vincent, Borough Surveyor, Town Hall, Newbury	do.
Bacteria Tanks, Filters, &c.	Barnard Castle R.D.C.	J. E. Parker, Civil Engineer, Post Office Chambers, Newcastle	do.
Bacteria Beds, Haslemere	Hambledon R.D.C.	J. H. Howard, Surveyor, Lower-street, Haslemere	July 10
Reservoir, Batworth Park, Littlehampton	.....	H. Howard, Engineer, Town Offices, Littlehampton	do.
Bridge over River Braan, near Dunkeld	.....	G. A. Mackenzie, British Linen Bank House, Perth	do.
Laundry Buildings, Chippenham, Wilts	Sanitary Laundry Co., Ltd.	T. Stacey, St. Mary's-street, Chippenham	do.
Workshops, Stores, &c., Newton-road	Rushden (Northants) U.D.C.	W. B. Madin, Civil Engineer, Surveyor, Vestry Hall, Rushden	do.
Additions to Workhouse, Grenoside	Wortley Guardians	G. A. Wilde, Architect, Bank-street, Sheffield	do.
Work at Municipal Buildings	King's Lynn Corporation	H. J. Weaver, Civil Engineer, Town Hall, King's Lynn	do.
Additions to Schools, Pontypool	.....	B. Lawrence & Son, Architects, Newport	do.
Cemetery Walls, &c.	Birkdale (Lancs) U.D.C.	J. Smallshaw, Town Hall, Birkdale	do.
Lavatory Works, &c., Crumpsall	Manchester Guardians	A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester	do.
Covered Reservoir, Littlehampton	.....	H. Howard, Engineer, Town Offices, Littlehampton	do.
Drainage, &c., at Workhouse	Navan (Ireland) Guardians	A. Scott, Architect, Board Room, Navan	do.
Additions, &c., to Thornham House, Devon	Mr. W. D. Pearse	Mr. Barrows, Weir View, Totnes	do.
Quartzite, Ragstone, &c.	Gillingham (Kent) U.D.C.	F. C. Boucher, Council Offices, New Brompton	July 11
Alterations, &c., to Town Hall	Haslemere Parish Council	J. Howard, Surveyor, Lower-street, Haslemere	do.
Steam Laundry Buildings	Clevedon (Som.), &c., Laundry Co.	T. J. Moss-Flower, Civil Engineer, 28, Baldwin-street, Bristol	do.
*Portland Cement	Croydon Borough Council	Town Hall, Croydon	July 12
*Coastguard Buildings, Pennan, Aberdeenshire, N.B.	Admiralty	Clerk of Works, Maybank, Broughty Ferry, N.B.	do.
Reservoir, High-lane, Ridgway	Chesterfield R.D.C.	J. Frith, Engineer, Baslow, via Chesterfield	do.
Kerbing, Paving, &c., near Birmingham	Yardley R.D.C.	A. W. Smith, Surveyor, Sparkhill, Birmingham	do.
*Reconstruction of Mews Bridge	Southampton Corporation	County Surveyor, The Castle, Winchester	July 13
Additions to Schools	Church Coppenhall (Cheshire) S.B.	J. A. Atkinson, 18, Hightown, Crewe	do.
House, Finsthwaite	Misses Coward	J. Coward, Stott Park Mill, Lake Side	do.
House, Ellistones, Greetland, Halifax	.....	Walsh & Nicholas, Architects, Halifax	do.
Villa, Greenroyd Estate, Halifax	.....	G. Buckley & Son, Architects, Tower Chambers, Halifax	do.
Pier Extension, Islay, N.B.	.....	J. Laughton, Eallabus, Bridgend, Islay	do.
Seven Cottages, Auldearn	.....	R. & R. Urquhart, Forres	do.
Shedding, &c., Chester	Cheshire Agricultural Society	T. A. Beckett, St. Werburgh's Chambers, Chester	do.
Cottage, The Close, Warminster, Wilts	Mr. W. F. Morgan	W. H. Hardick, Architect, High-street, Warminster	do.
Slaughter-house	Hexham U.D.C.	R. T. Surtees, Council Offices, Hexham	do.
Additions to School	Sale (Cheshire) U.D.C.	W. Holt, Engineer, Council Offices, Sale	do.
Two Villas, Rhymney, Wales	.....	Smith & Davies, Architects, 50, High-street, Merthyr Tydfil	do.
Four Villas, Rhymney	Mr. D. Joseph	do.	do.
Road and Sewer Works, Eastern Drive, &c.	Garston (Lancs) U.D.C.	F. W. Bowden, Civil Engineer, Public Offices, Grassendale	July 14
Sewerage Works, Castle Ward	Northwich U.D.C.	H. Bancroft & Son, Civil Engineers, 8, Mosley-street, Manchester	July 15
Granite Road Metal	Bedford Corporation	T. S. Porter, Town Hall, Bedford	do.
Underground Conveniences	Leeds Corporation	City Engineer, Municipal Buildings, Leeds	do.
Kerbing, Paving, &c., Hemel Hempstead	Herts County Council	U. A. Smith, Surveyor, 41, Parliament-street, S.W.	do.
Long Brick Wall at Asylum, Bootham, York	.....	Demaine & Brierley, Architects, Lendal, York	do.
Banking Premises, Park Row, Leeds	.....	Oliver & Dodgshun, Architects, Park-square, Leeds	do.
Several Cottages, Trealaw, Wales	Ynyscynon Building Club	A. O. Evans, Architect, Pontypridd	do.
*Engine and Boiler House, &c.	Erith U.D.C.	W. Egerton, 12, Queen's-road, Erith	do.
*Iron and Steel Balconies	Kingston Union	W. H. Hope, Architect, Hampton Wick	July 16
*Additions to Nurses' Home	do.	do.	do.
Providing and Laying Pipe Sewers	Godstone R.D.C.	T. C. Barralet, Surveyor, Council Offices, New Oxted	do.
Sea Wall, North Denes	Lowestoft Town Council	W. T. Douglass, Engineer, 15, Victoria-street, S.W.	July 17
*Extension to Hospital, Seacroft	Leeds Corporation	E. T. Hall, Architect, 54, Bedford-square, W.C.	do.
Road Stone	Winsford U.D.C	H. Hulse, Surveyor, Winsford	do
*School, &c.	Swindon School Board	See Advertisement	July 18
Granite Road Metal	Braintree U.D.C.	H. H. Nankivell, Surveyor, Vestry Hall, Braintree	do.
Stoneware Pipe Sewers, &c.	Bridlington Town Council	E. R. Matthews, Civil Engineer, Town Hall, Bridlington	July 20
Road Works, Monins-road	Dover Town Council	H. E. Stilgoe, Civil Engineer, Town Hall, Dover	July 22
*Medical Officer's Residence	Poplar Union	J. & S. F. Clarkson, 136, High-street, Poplar, E.	July 24
Steel Swingbridge, Grangemouth, N.B.	Caledonian Railway Company	Sir J. Wolfe Barry, Civil Engineer, 21, Delahay-st., Westminster	July 29
*Infirmary	Cannock Union	Ashton Veall, 84, Darlington-street, Wolverhampton	July 30
*Nurses' Home, &c.	Chester County Asylum	County Architect, Newgate-street, Chester	Aug. 1
*Sewers	Stroud R.D.C.	Council Offices, John-street, Stroud	do.
*Electric Lighting	Brecon and Radnor Joint Asylum	Giles, Gough & Trollope, 28, Craven-street, Strand	Aug. 5
*Library, &c.	Isle of Wight County Council	See Advertisement	do.
*Alterations, &c., to School	Watford School Board	C. P. Ayres, Burvale, Watford	No date
Three Tenements, Bruntsfield, N.B.	.....	R. & T. Watson, Surveyors, 5, York-place, Edinburgh	do.
Pennant Stone Kerbing and Laying (2,000 ft.)	Monmouthshire County Council	W. Tanner, County Surveyor, Newport, Mon	do.
Club Buildings, Moston, Lancs	.....	S. M. Chadwick, Civil Engineer, Chapel Walks, Manchester	do.
Buildings, &c., Port Talbot, Wales	English Celluloid Company	F. B. Smith, Civil Engineer, Port Talbot	do.
Car Sheds, &c., Greenock, N.B.	Greenock, &c., Tramways	C. W. G. Little, Donington House, Norfolk-street, W.C.	do.
Villa, The Leas, Westcliff-on-Sea, Essex	Mr. E. Prater	Greenhalgh & Brockbank, Architects, Southend	do.
Stores Buildings, Lowther-street	York Equitable Indus. Soc. Ltd.	Athron & Beck, Architects, Doncaster	do.
*Extensions to County Asylum Buildings	Cornwall County Asylum	See Advertisement	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Assistant Engineer	Middlesex County Council	600*l.* per annum	July 10
*Clerk of Works	Enfield U.D.C.	3*l.* per week	July 13

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii. x. & xxiv. *Public Appointments, pp.* xxi. & xxiv.

LONDON SCHOOL BOARD TENDERS.

AT the last meeting of the London School Board, the Works Committee submitted the following lists of tenders :—

BURGHLEY-ROAD SCHOOL (Highgate-road).—For new offices for junior girls :—

Marchant & Hirst	£275	T. Cruwys	£208
Killingback & Co.	231	Stevens Bros.*	186
Godson & Sons	225		

ESSEX-STREET SCHOOL (Stepney).—For carrying-out alterations to windows :—

A. E. Symes	£69 0 0	J. F. Holliday	£49 19 0
T. H. Jackson	65 8 6	J. T. Robey	47 12 0
F. & F. J. Wood	63 0 0	Johnson & Co.*	43 0 0

EAST-LANE SCHOOL (Bermondsey Wall).—For new house for schoolkeeper :—

Wall & Co.	£1,248	Rice & Son	£1,095
Maxwell Bros., Ltd.	1,192	Akers & Co.	1,055
Lathey Bros.	1,164	J. & C. Bowyer	1,013
F. & H. F. Higgs	1,152	T. D. Leng*	996
J. Appleby	1,133		

FAUNCE-STREET SCHOOL (Kennington Park-road).—For additional heating surface :—

W. G. Cannon	£108 0	G. & E. Bradley	£131 0
Brightside Foundry and Engineering Company, Ltd.	190 0	Duffield & Sons	121 0
		J. Esson	118 10
Knight & Sons	190 0	Wenham & Waters, Ltd.*	118 0
J. C. Christie	155 0		

FLINT-STREET SCHOOL (Walworth).—For sanitary and drainage works :—

G. Parker	£6,669 0 0	Ashby & Horner	£2,770 0 0
Martin, Wells, & Co.	4,042 0 0	Johnson & Co.	2,746 0 0
		J. & C. Bowyer	2,621 0 0
Falkner & Sons	3,209 0 0	Willmott & Sons*	2,550 0 0
R. P. Beattie	2,968 15 6		

HITHER GREEN SCHOOL (Lewisham).—For enlarging the manual centre and providing a room for science teaching, &c. :—

Johnson & Co.	£3,354 0 0
Holliday & Greenwood, Ltd.	2,910 0 9
F & H. F. Higgs	2,906 0 0
W. Johnson & Co., Ltd.	2,886 0 0
Kirk & Randall	2,878 0 0
Garrett & Son	2,799 0 0
Smith & Sons, Ltd.	2,724 0 0
J. & C. Bowyer*	2,379 0 0

"HUGH MYDDELTON" SCHOOL (Clerkenwell).—For sanitary works :—

J. Peattie	£225	Stevens Bros.*	£197
Bristow & Eatwell	210		

LANGFORD-ROAD SCHOOL (Fulham). — For additional heating surface :—

G. Davis	£410 0 0
Purcell & Nobbs	422 0 0
Defries & Sons, Limited	299 15 0
Bates & Sons	295 0 0
The Lighting Corporation, Limited	290 18 4
G. & E. Bradley	275 0 0
Brightside Foundry and Engineering Company, Limited	275 0 0
Seward & Co.	270 0 0
Knight & Sons*	270 0 0

PONTON-ROAD SCHOOL (Nine Elms).—For adapting portion of building for a day industrial school :—

First Competition.

Hooper & Son	£3,060	Garrett & Son	£2,869
W. Downs	2,983	Lathey Bros.	2,869
F. & H. F. Higgs	2,941	Rice & Son	2,845
J. Appleby	2,901		

As the amount of the lowest tender was in excess of the architect's estimate, the Committee decided that fresh tenders should be obtained. These tenders have now been received, the amounts of which are as follows :—

Second Competition.

Martin, Wells, & Co. General Builders, Ltd.	£3,485	Maxwell Bros., Ltd.	£2,785
	2,975	H. Line*	2,585

RUSHMORE-ROAD (Clapton).—For dividing two long rooms in boys' department :—

	A—Boys' Department (including half of total provisional sum, viz., £107 10s.)	B—Girls' Department (including half of total provisional sum, viz., £107 10s.)	
	£ s. d.	£ s. d.	£ s. d.
London School Furniture Company	566 0 0	680 0 0	1,246 0 0
Lawrance & Sons	565 0 0	550 0 0	1,115 0 0
W. Shurmur	550 0 0	545 0 0	1,095 0 0
G. Barker	500 0 0	556 0 0	1,056 0 0
Barrett & Power	414 0 0	568 10 0	982 10 0
Stevens Bros.	441 0 0	516 0 0	957 0 0
Willmott & Sons	420 0 0	500 0 0	920 0 0
Williams & Son	402 0 0	508 0 0	910 0 0
Bruce, Croom, & Co.*	355 15 2	451 16 6	807 11 8

SHILLINGTON-STREET SCHOOL (Battersea).—Partitions, &c. :—

	£	For supply of additional pitch pine blocks or for blocks omitted from quantity provided in specification at per yard super. s. d.
W. Hammond	790	—
Hooper & Son	789	—
F. & H. F. Higgs	759	6 9
Lathey Bros.	737	6 9
Marsland & Sons	730	4 0
E. B. Tucker	697	6 6
R. S. Ronald	684	—
E. Triggs	674	—
General Builders, Ltd.	657	4 6
R. H. Galbraith	653	—
Garrett & Son*	641	6 0

SURREY-LANE SCHOOL (Battersea).—For provision of a porch for infants' department :—

H. & G. Mallett	£305	Rice & Son	£289
R. S. Ronald	305	Maxwell Bros.	288
W. Hammond	293	E. B. Tucker	260
Williams & Son	293	Coleman & Co.*	233
Lathey Bros.	289		

SWAFFIELD-ROAD SCHOOL (Earlsfield).—For works on site :—

W. Hammond	£390 0	Lathey Bros.	£269 0
Williams & Sons	378 0	Maxwell Bros., Ltd.	265 0
R. S. Ronald	365 5	Garrett & Son*	253 0
E. Triggs	292 0		

WEBB-STREET SCHOOL (Bermondsey New-road).—For heating works :—

Comyn, Ching, & Co.	£154	W. Simmons	£109
W. G. Cannon	119	Stevens & Sons	100
Brightside Foundry & Engineering Co., Ltd.	118	Palowkar & Sons*	85

WESTON-STREET SCHOOL (Southwark).—For halls and other improvements :—

F. & H. F. Higgs	£4,923	Johnson & Co.	£4,370
J. Garrett & Son	4,795	E. Triggs	4,289
H. Wall & Co.	4,697	Stimpson & Co.	4,248
J. Marsland & Sons	4,490	General Builders, Ltd.*	3,958
J. Appleby	4,464		

For Repairs on Schedule (Groups 1, 2, and 3).

	Group 1.	Group 2.	Group 3.
H. Groves	+4½%	+45%	+33⅓%
W. J. Howie	+35%	+35%	+35%
D. Gibb & Co.	+30%	+30%	+30%
† J. F. Holliday*	+25%	+25%	+25%

† This contractor states that for sanitary works (*i.e.*, repairs and alterations to sanitary work to be executed under the Board's Sanitary Surveyor) he will require an additional 12½ per cent.

Running contracts for the supply of various articles of ironmongery, &c.

—	Lavatory Cans.	Buckets.	Scuttles. (Japanned).	† Portable Coppers (14 gallons) for Laundry Centres.	‡ Screens for Iron Stoves.	Screw Hammers.	Squeegees. No. 1.	Squeegees. No. 2.	Squeegees. No. 3.
	per doz. £ s. d.	per doz. £ s. d.	each s. d.	each £ s. d.	each s. d.	per doz. £ s. d.	per doz. £ s. d.	per doz. £ s. d.	per doz. £ s. d.
Pearson, Limited	1 2 6	1 1 9	6 2	—	—	—	3 19 0	3 13 0	3 7 0
O'Brien, Thomas, & Co.	1 15 0	1 5 6	7 9	3 0 0	13 0	2 8 0	—	—	—
Pryke & Palmer	1 16 5	1 0 6	5 5	2 4 5*	11 0	2 12 0	2 7 10	2 4 11	2 1 5
Braby & Co., Limited	—	1 4 6	—	2 9 6	9 6	—	—	—	—
Truman & Co.	3 12 0	1 12 0	7 0	—	—	—	—	—	—
Bird & Co.	1 3 6	0 17 9*	4 10	2 6 0	6 6*	1 18 0	1 19 0*	2 2 0*	2 7 0
Nettlefold & Sons	18 0*	0 18 0	4 6*	—	—	—	—	—	—
Davis, Limited	—	—	—	—	10 4	6 6 0	4 17 0	4 9 0	3 13 6
Pearson & Co.	—	—	—	—	—	1 14 6*	—	—	—

† A tender was also received for these articles at £2 5s. each, but the form was not signed.
‡ A tender was also received for these articles at 8s. 6d. each, but the form was not signed.

Estimates for executing repairs to furniture in various schools.

—	Edinburgh-road.	Blackheath-road.	Byron and Bright-street.	Lower Chapman-street.
G. M. Hammer & Co., Ltd.	£109 2 3	£198 12 6	£28 4 7	£87 9 6
H. Bouneau	72 11 6	185 13 2	20 0 0	87 8 6
T. Cruwys	57 14 9	170 14 9	28 10 0	74 8 0
General Builders, Ltd.	49 0 0	125 0 0	24 0 0	69 0 0
London School Furniture Company	45 9 3	113 7 3	18 17 6	65 13 0
Wake & Dean, Ltd.*	36 14 0	90 16 4	18 2 5	61 6 6

Running Contracts for the Supply of various Articles of Furniture, &c.

	Platforms for Pedestal Tables. Each. £ s. d.	Carpenters' Benches. Each. £ s. d.	Carpenters' Stools. Each. £ s. d.
Bruce, Croom, & Co.	1 4 0	*2 2 6	*0 5 9
London School Furnishing Co.	*0 19 6	2 6 0	0 7 6
W. H. Lascelles & Co.	1 12 0	3 1 0	0 8 9
G. M. Hammer & Co., Ltd.	1 2 6	2 15 0	0 8 0
T. Cruwys	1 11 0	2 5 6	0 9 0
H. Bouneau	1 10 0	2 5 6	0 8 0
[Unsigned]	1 10 0	—	—

	Chairs (Arm). Per 12. £ s. d.	Chairs (Small). Per 100. £ s. d.
T. Glenister	£6 0 0	£19 3 4
Waring & Sons	6 14 0	17 12 0
Cox & Son, Ltd.	5 17 0	15 0 0
T. Harding*	4 16 0	13 6 8

	Lesson Stand. Each. s. d.	Plate Racks. Each. s. d.	Meat Safes. Each. £ s. d.
Educational Supply Association, Ltd.	3 10	11 6	1 3 0
T. Cruwys	5 6	10 6	0 13 6
H. Bouneau	4 0	10 0	0 13 0
London School Furniture Co.	3 0	9 0	*0 12 6
Wake & Dean, Ltd.	*2 10	12 0	0 17 6
R. H. Galbraith	5 6	*7 9	0 13 9
Bennett Furnishing Co.	3 6	—	—

	Inkwell Cupboards. Each. £ s. d.	Tables. 3 ft. 6 in. by 2 ft. 6 in. Each. £ s. d.	Tables. (Kindergarten large. Each. £ s. d.
Lonnie & Co.	7 7 0	2 12 0	3 10 0
Educational Supply Association, Ltd.	5 12 0	2 11 9	2 7 3
Hammer & Co., Ltd.	4 0 0*	1 15 0	1 18 6
T. Cruwys	4 3 0	1 14 0	1 15 0
H. Bouneau	4 2 6	1 12 6*	1 13 6*
Spencer & Co	6 10 0	2 12 6	—

	Green baize curtains. (A quality.) per ft. super. s. d.	Green baize curtains. (B quality.) per ft. super. s. d.
Janes & Son	1 10	2 0
Mrs. H. Evans	0 7*	0 6*

For the supply of locks :—

	3-in. Brass Cut Cupboard Locks (2 lever). per doz. s. d.	3½-in. Brass Cut Cupboard Locks (2 lever). per doz. s. d.
Carter & Aynsley, Limited	8 0	12 6
S. Parkes & Co.	9 0	11 0
Lockerbie & Wilkinson, Ltd.	8 10	11 6
Pryke & Palmer*	7 10	9 10

Cleaning and Painting.

The work at the following schools will be executed during the summer holidays, July 25 to August 24, 1901. Where exterior as well as interior work has to be done, an additional week will be allowed for the former :—

ALVERTON-STREET.—Painting exterior and cleaning interior :—

T. D. Leng	£479 0	S. Musgrove	£340 2
Hayter & Son	395 0	W. J. Howie	340 5
H. Groves	355 0	W. Banks*	286 0

BAKER-STREET.—Cleaning interior and painting exterior :—

Beeson & Sons	£612 11	Gibb & Co.	£365 0
G. Barker	398 0	Corfield & Co.	360 0
Dolman & Co.	382 0	J. F. Holliday	356 0
J. T. Robey	367 0	Vigor & Co.*	309 10

BALTIC-STREET.—Painting interior :—

T. Cruwys	£350	Marchant & Hirst	£306
M. Pearson	333	W. Chappell	255
		G. Barker*	229

BELL-STREET.—Painting interior (old portion) and cleaning interior (new portion) :—

Beeson & Sons	£421 18	Marchant & Hirst	£296 0
Thompson & Beveridge	323 0	F. Chidley	246 0
T. Cruwys	311 0	Bristow & Eatwell*	231 10

BLACKSTOCK-ROAD.—Painting interior :—

C. & W. Hunnings	£561	Grover & Son	£496
McCormick & Sons	542	Stevens Bros.*	436
W. H. Stephens	525		

CAMPBELL-STREET.—Painting interior (old portion) :—

T. Cruwys	£400 0	W. Chappell	£105 0
Marchant & Hirst	245 0	F. Chidley	169 0
Bristow & Eatwell	209 5	Balfour & Co.*	152 3

CAPLAND-STREET.—Painting exterior and cleaning interior (junior and special school) :—

Wall & Co.	£295 0	Bristow & Eatwell	£221 11
Marchant & Hirst	287 0	F. Chidley*	206 15
W. Chappell	250 0		

CATOR-STREET.—Painting exterior :—

H. Line	£330	J. F. Ford	£263
Baylis & Francis	313	Rice & Son	228
Dearing & Son	275	Sayer & Son*	227

CREEK-ROAD.—Painting interior (old portion) and interior and exterior (j. m. school) :—

T. D. Leng	£679 0	W. J. Howie	£373 17
Johnson & Co.	498 0	E. Proctor	320 0
Hayter & Son	455 0	S. Musgrove*	315 16
H. Groves	389 0		

DIVISIONAL OFFICES AND SPECIAL SCHOOL, MORNING-LANE.—Painting interior :—

Barrett & Power	£118 0	McCormick & Sons	£97 0
G. Barker	113 0	L. Willmott*	72 10
Corfield & Co.	101 0		

EDGCOMBE-ROAD.—Painting interior and exterior (iron buildings) :—

W. V. Goad	£145	H. Line*	£90
Sayer & Son	120		

FARRANCE-STREET.—Painting exterior :—

Beeson & Sons	£351 18	J. T. Robey	£209 0
A. W. Derby	226 0	Gibb & Co.	207 0
Corfield & Co.	215 0	Johnson & Co.*	188 0

GLOBE-TERRACE.—Painting exterior :—

F. Bull	£162 0	Stevens Bros.	£139 0
J. Haydon	145 0	G. Barker*	136 10

HACKFORD-ROAD.—Painting interior (school and p.-t. school) :—

Sayer & Son	£871	Holliday & Greenwood, Ltd.	£563
H. & G. Mallett	684	Rice & Son	559
Holloway Bros.	673	E. Triggs*	506
Maxwell Bros., Ltd.	585		

HASELRIGGE-ROAD.—Painting interior :—

H. & G. Mallett	£613 0	Garrett & Son	£489 0
Holloway Bros.	600 0	W. Hornett	487 0
Holliday & Greenwood, Ltd.	558 10	Maxwell Bros., Ltd.	469 0
Rice & Son	520 0	E. Triggs*	449 0

HONEYWELL-ROAD.—Cleaning interior :—

Lorden & Son	£388	J. & M. Patrick	£277
E. Flood	350	W. Hornett	239
Rice & Son	301	Johnson & Co., Ltd.*	230

[See also next page.

HORSEFERRY-ROAD.—Painting interior :—

T. L. Green.....	£529 0	Vigor & Co.....	£244 0
J. & M. Patrick ..	528 0	C. Gurling*	203 10
Lathey Bros.	289 0		

KENMONT-GARDENS.—Cleaning interior :—

T. Cruwys.....	£200 10	W. R. & A. Hide*	£139 0
F. Chidley	162 0	Bristow & Eatwell	125 0
W. Brown	156 0		

KENNINGTON-ROAD. — Painting interior and exterior :—

Martin, Wells, & Co.	£490	H. J. Williams	£383
J. F. Ford	465	E. Triggs*	360
G. Brittain	420	J. & M. Patrick	316
W. Hornett	403		

KILBURN-LANE.—Painting exterior :—

G. H. Sealey ..	£465 16 0	Bristow & Eatwell	£157 12 0
G. Neal	320 0 0	W. Brown	147 10 0
Balfour & Co. ..	256 14 6	F. T. Chinchen*	139 0 0
F. Chidley	196 0 0		
S. Polden.....	170 12 6		

LAMB-LANE.—Painting exterior (special school and correspondent's office) :—

Stevens Bros.	£108 0	Barrett & Power* ..	£76 0
G. Wales	88 5		

LAVENDER-HILL.—Painting exterior :—

Martin, Wells, & Co.	£420	Garrett & Son*	£286
Rice & Son	331		

MEDBURN-STREET.—Painting exterior and cleaning interior (junior girls' School) :—

Stevens Bros.	£330 0	Wall & Co.	£215 0
T. Cruwys	294 6	Marchant & Hirst*	199 0
Dearing & Son	239 0		

MINA-ROAD.—Painting interior and exterior :—

Johnson & Co.	£920	E. Triggs	£681
Sayer & Son	697	H. J. Williams*	611

MORDEN-TERRACE.—Painting interior :—

T. D. Leng.....	£694 0	E. Proctor	£366 0
W. Banks	416 0	H. Groves	341 0
W. J. Howie.....	389 14	Hayter & Son*	300 0

NEW PARK-ROAD. — Painting interior and exterior :—

Holliday & Greenwood, Ltd.	£467	Rice & Son	£401
		Garrett & Son.....	346
Sayer & Son	448	Star & Son	341
Lathey Bros.	407	Maxwell Bros., Ltd.*	338

OLD WOOLWICH-ROAD.—Painting interior :—

W. Banks.....	£269 19 6	H. Groves	£225 0 0
E. Proctor	255 0 0	Hayter & Son*	189 0 0

PRIORY-GROVE. — Painting interior and exterior (special school) :—

King & Son	£84	J. Garrett & Son*	£45
W. Downs	72		

QUEEN'S-ROAD.—Painting interior and exterior :—

Corfield & Co.....	£853	G. Barker	£575
Barrett & Power.....	825	T. Cruwys.....	549
W. Shurmur.....	610	C. Willmott*	491
Silk & Son	597		

ST. DUNSTAN'S-ROAD.—Painting interior :—

W. R. & A. Hide....	£466	C. Curd*	£360
W. Chappell	420	W. Brown.....	297
W. Hammond.....	399		

ST. JOHN'S, HALLEY-STREET.—Painting exterior :—

Dolman & Co.....	£203 0	Vigor & Co.	£189 0
J. T. Robey.....	200 0	G. Wales*	119 0
Hoard & Co.	190 10		

SHILLINGTON-STREET. — Painting interior and exterior (special school) :—

W. Hornett.....	£199	J. & M. Patrick*	£155
Rice & Son	177		

WEST LAMBETH DIVISIONAL OFFICES.—Painting interior :—

W. Hornett	£104 0	W. Downs	£69 0
Rice & Son	85 0	Maxwell Bros., Ltd.*	66 10
H. & G. Mallett ..	75 0		

WILLIAM-STREET.—Painting interior (infants' and p.t. schools) :—

W.R. & A. Hide	£210 15 0	W. Hammond..	£145 7 6
W. Chappell ..	205 0 0	F. Chidley*....	135 0 0
W. Brown	178 0 0		

WOODLAND-ROAD.—Painting interior :—

A. J. Acworth	£326 0	G. Kemp	£295 0
Johnson & Co.	314 10	Lorden & Son	277 15
W. Johnson & Co., Ltd.	304 0	W. Hornett	259 0
		J. & C. Bowyer* ..	247 0

YORK-ROAD.—Painting exterior :—

Stevens Bros. ..	£139 0 0	Marchant & Hirst	£117 0 0
C. & W. Hunnings	125 12 6	W. Chappell ..	110 0 0
		G. Wales*	101 0 0

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LIVERPOOL: 6 and 8, HATTON GARDEN.
GLASGOW: 47 and 49, ST. ENOCH-SQUARE.
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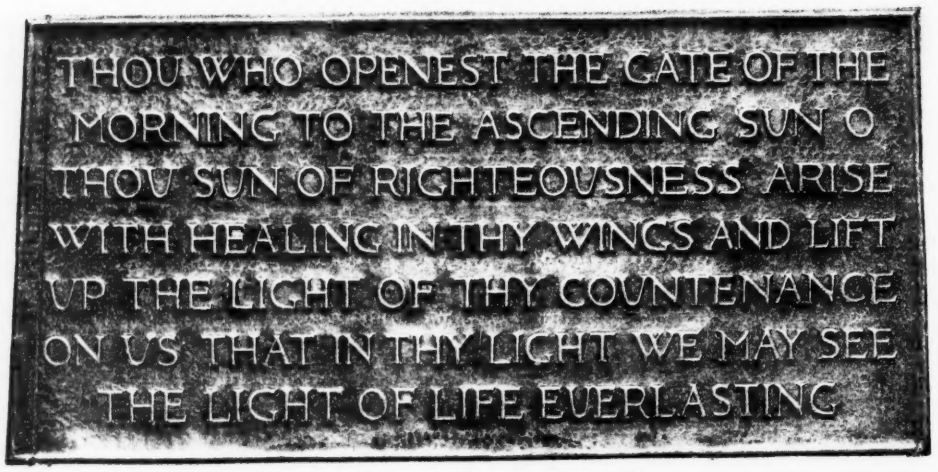
OF THE ANCIENT PARVAN RACE OF PERSIA
A CITIZEN OF THE LOYAL TOWN OF BOMBAY
WHO LIE HERE PEACEFULLY VNDER
THE FAR OFF SKY OF WIDE FAMED BRITAIN

INSCRIPTION IN PANEL OVER THE DOOR.

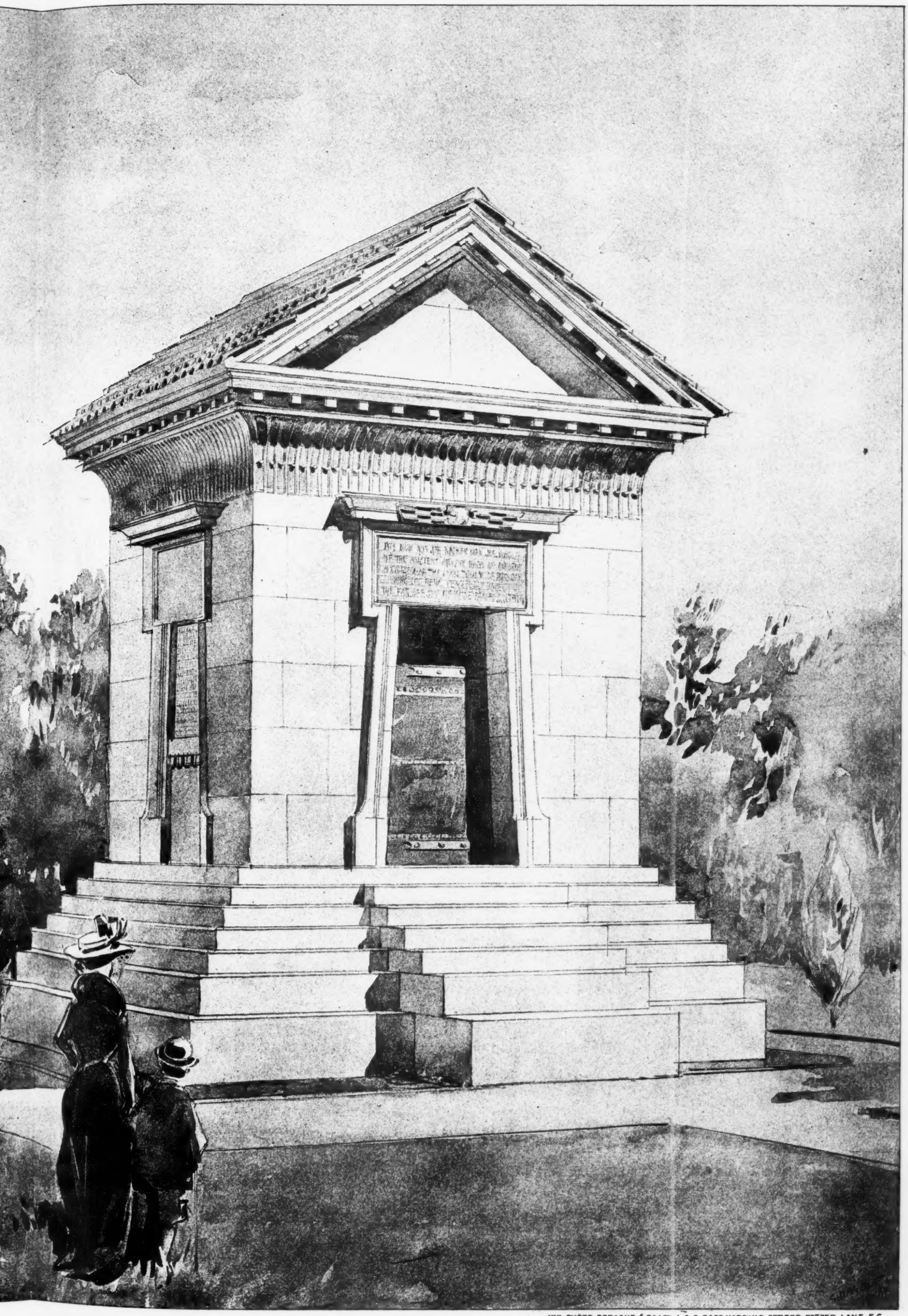

THOU WHO OPENEST THE GATE OF THE
MORNING TO THE ASCENDING SUN O
THOV SUN OF RIGHTEOVSNESS ARISE
WITH HEALING IN THY WINGS AND LIFT
VP THE LIGHT OF THY COVNTENANCE
ON VS THAT IN THY LIGHT WE MAY SEE
THE LIGHT OF LIFE EVERLASTING

INSCRIPTION IN PANEL ON DOOR.

THOSE OF OVR POSTERITY WHO
LOVINGLY RECALL OVR NAME WHO
IN THE DARK COLD MONTHS OF THE
SVNKEN SVN OF WINTER SITTING BE
SIDE THEIR HOVSEHOLD FIRES REVER
ENTLY MEDITATE ON OVR NAME AND
WHEN THE SVN OF SVMMER WARMS THE
EARTH OFFER TO OVR DISEMBODIED
SPIRIT THE FRAGRANCE OF FLOWERS
AND FRVIT AND EVER NAME VS
WITH A BLESSING THEM SHALL THE
LORD OF ALL GRACE AND GLORY
THE LORD AHVRAMAZDA BLESS
EVERLASTINGLY.

INSCRIPTION IN PANEL ON SIDE OF TOMB.

THE WADIA MONUMENT, BROOKWOOD CEMETER



INK-PHOTO, SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

EXTERIOR VIEW OF TOMB.

CEMETERY.—MR. T. E. COLLCUTT, F.R.I.B.A., ARCHITECT.

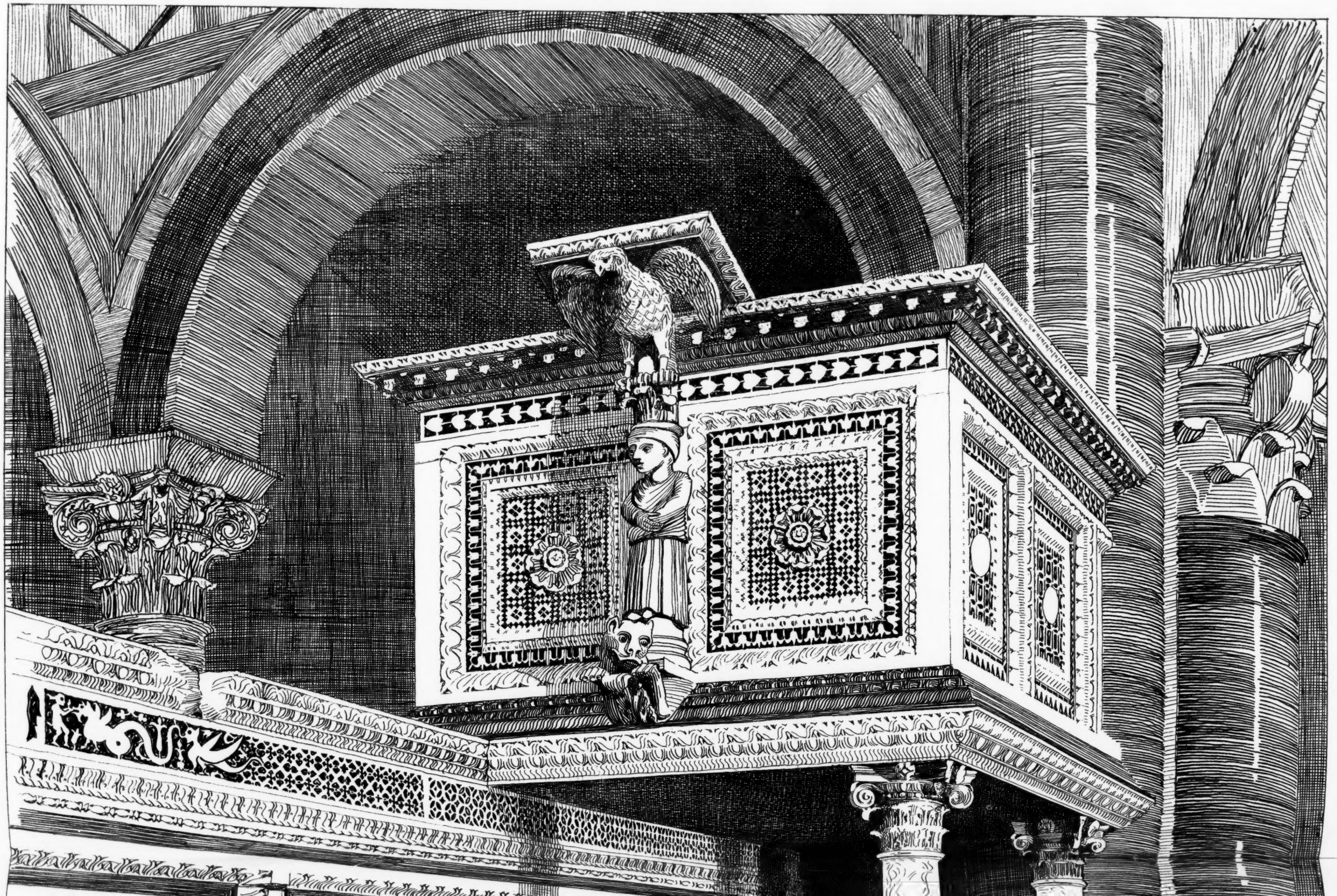
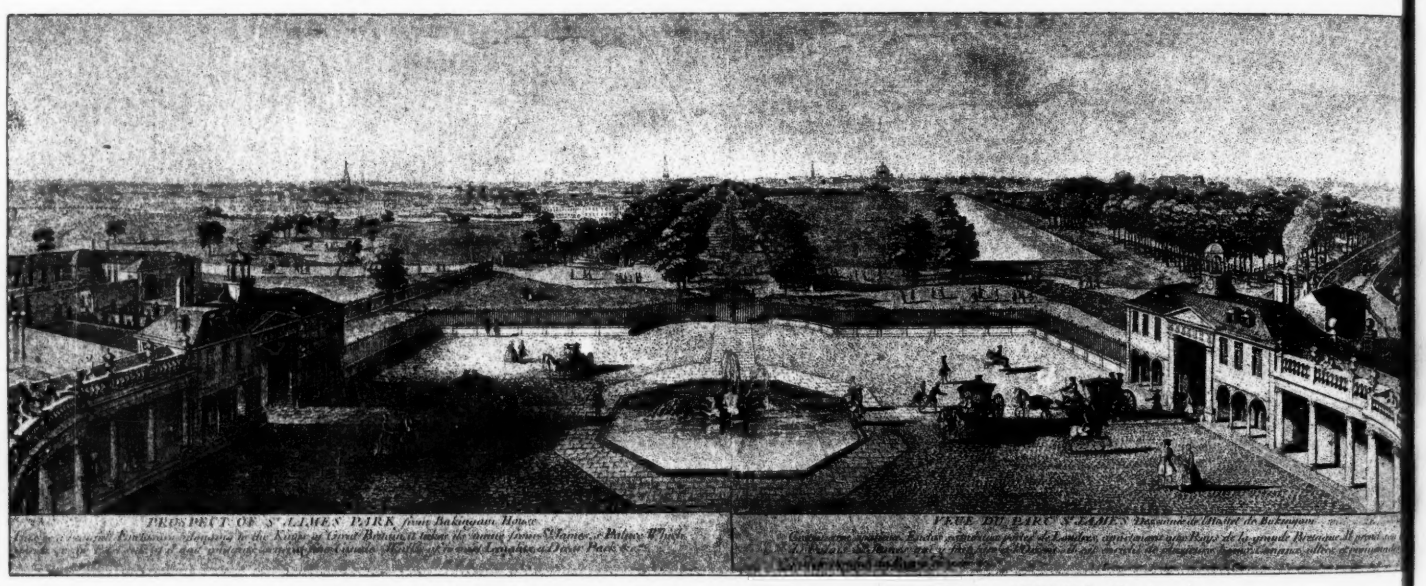


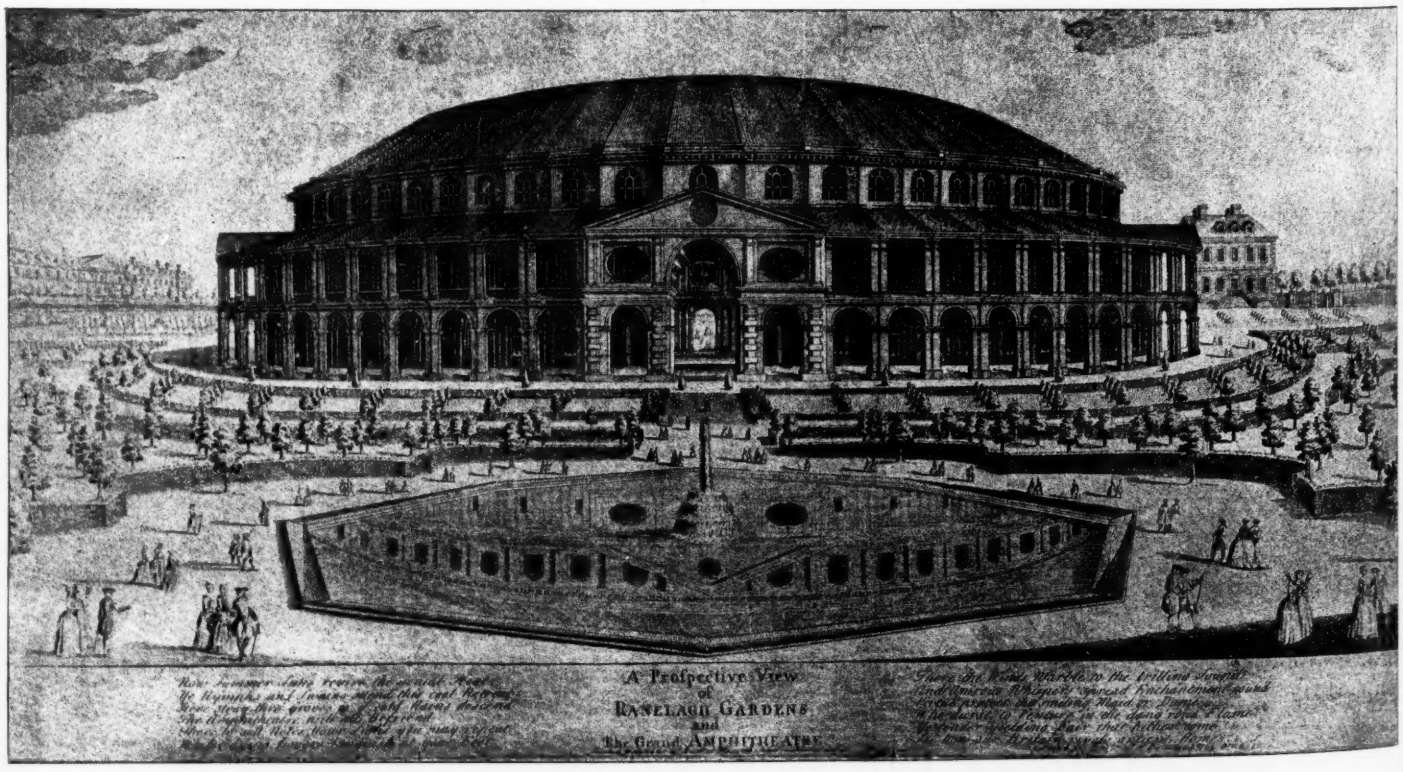
PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5. EAST HARDING STREET. FETTER LANE. E.C.

PULPIT, SAN MINIATO, FLORENCE.—From a Drawing by Mr. W. Curtis Green.

BUCKINGHAM HOUSE: on the site of which Buckingham Palace now stands.



VIEW OF ST. JAMES'S PARK FROM COURTYARD OF BUCKINGHAM HOUSE (XVIIIth Century).



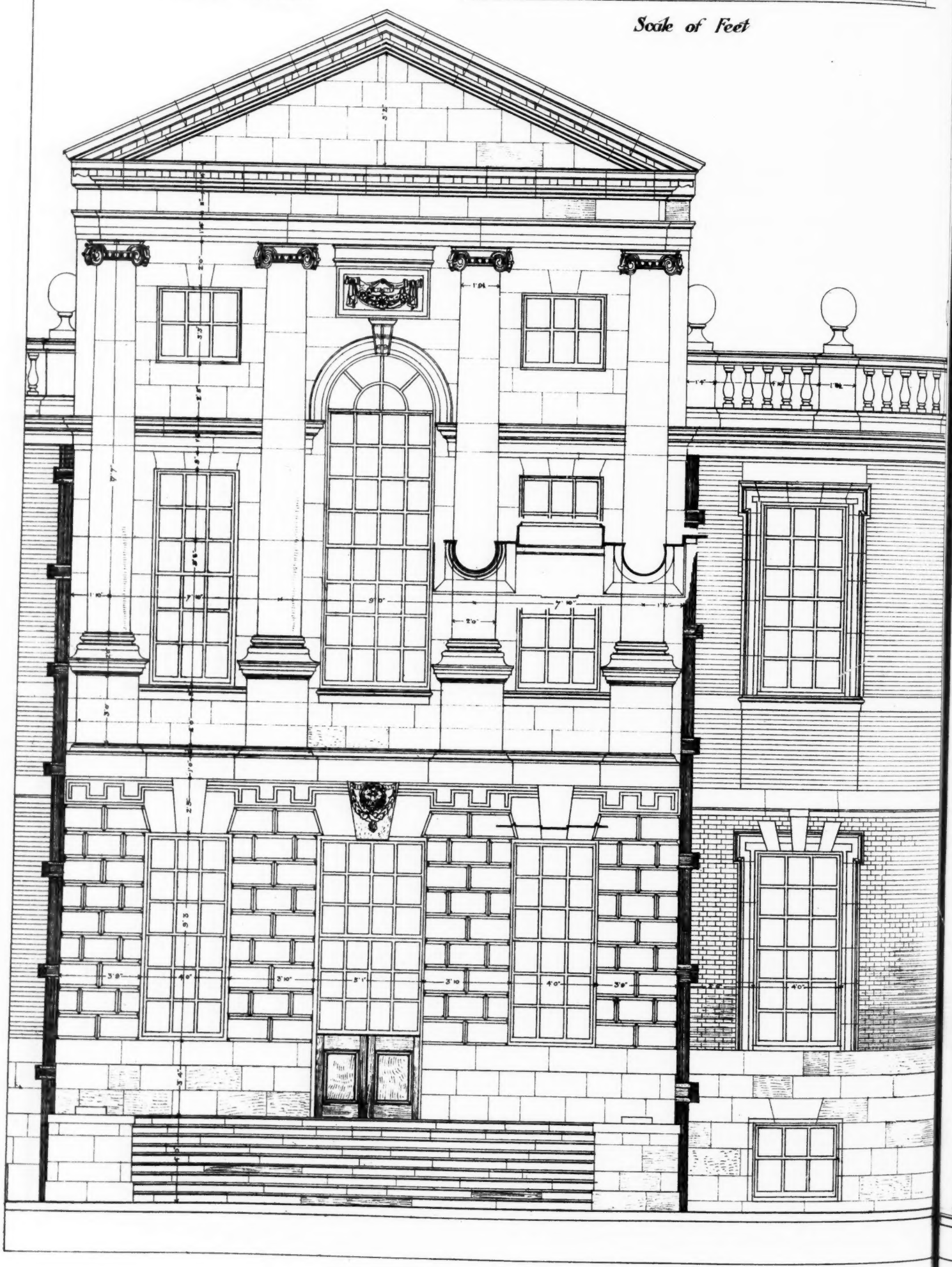
ROTUNDA AND GARDENS OF RANELAGH: Rotunda erected 1742; demolished 1805.

RAYNHAM HALL NORFOLK

The East Front

0 1 2 3 4 5 6 7 8 9 10 20

Scale of Feet



DETAIL ELEVATION RAYNH

(REDUCED FROM PLATES IN "SOME ARCHITECTURAL

RAYNHAM HALL

The West Front

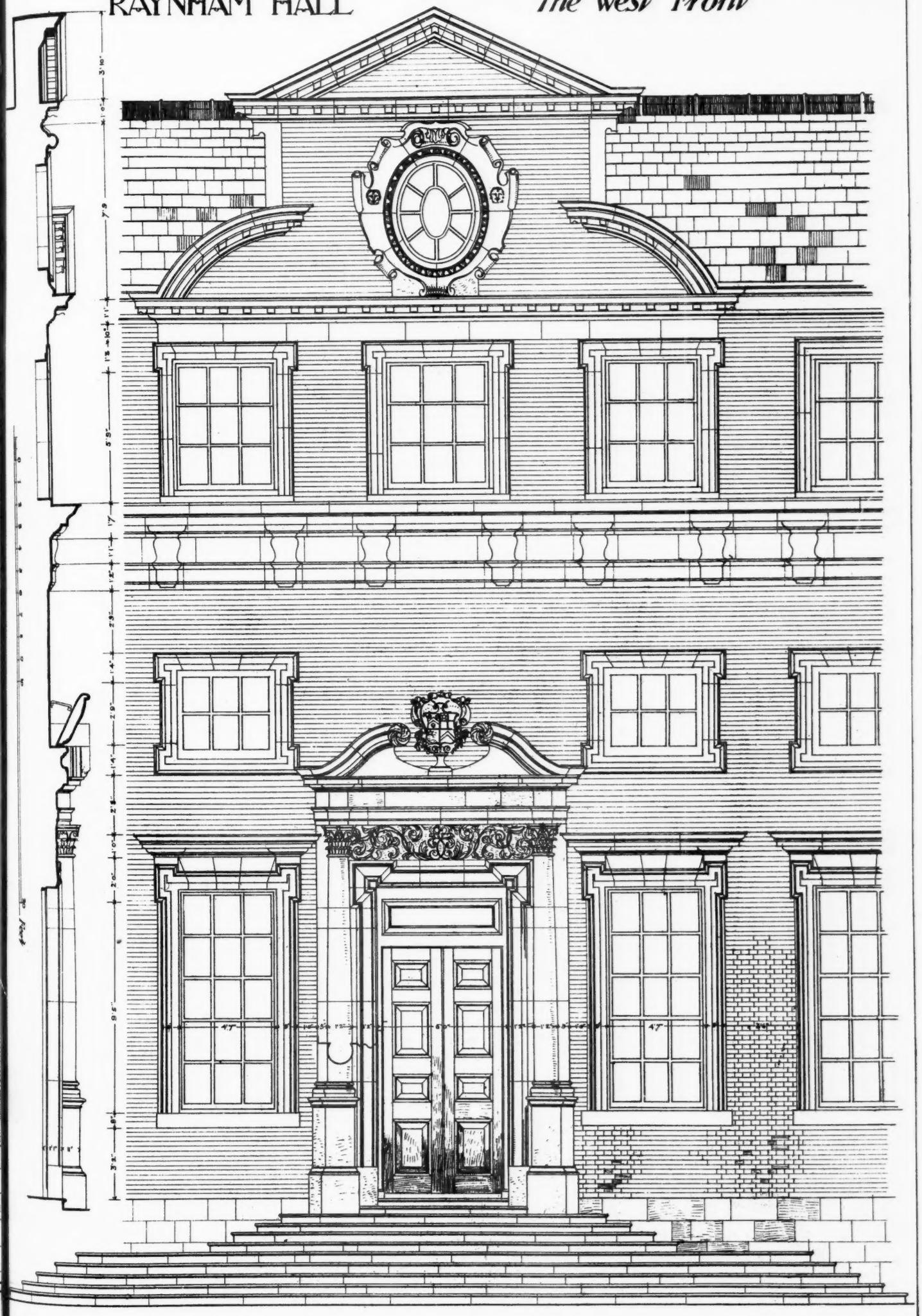
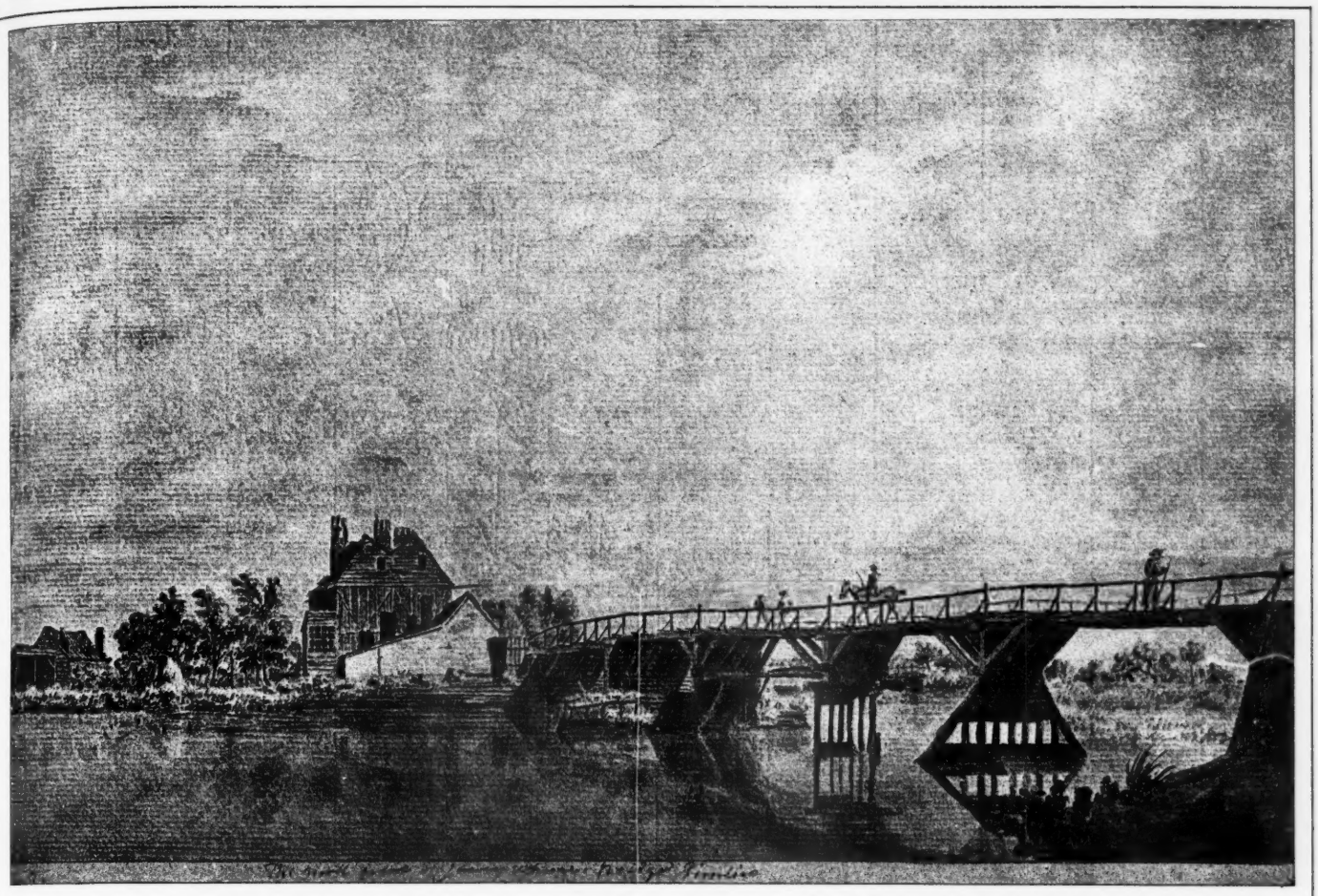


PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

EVATION RAYNHAM HALL.

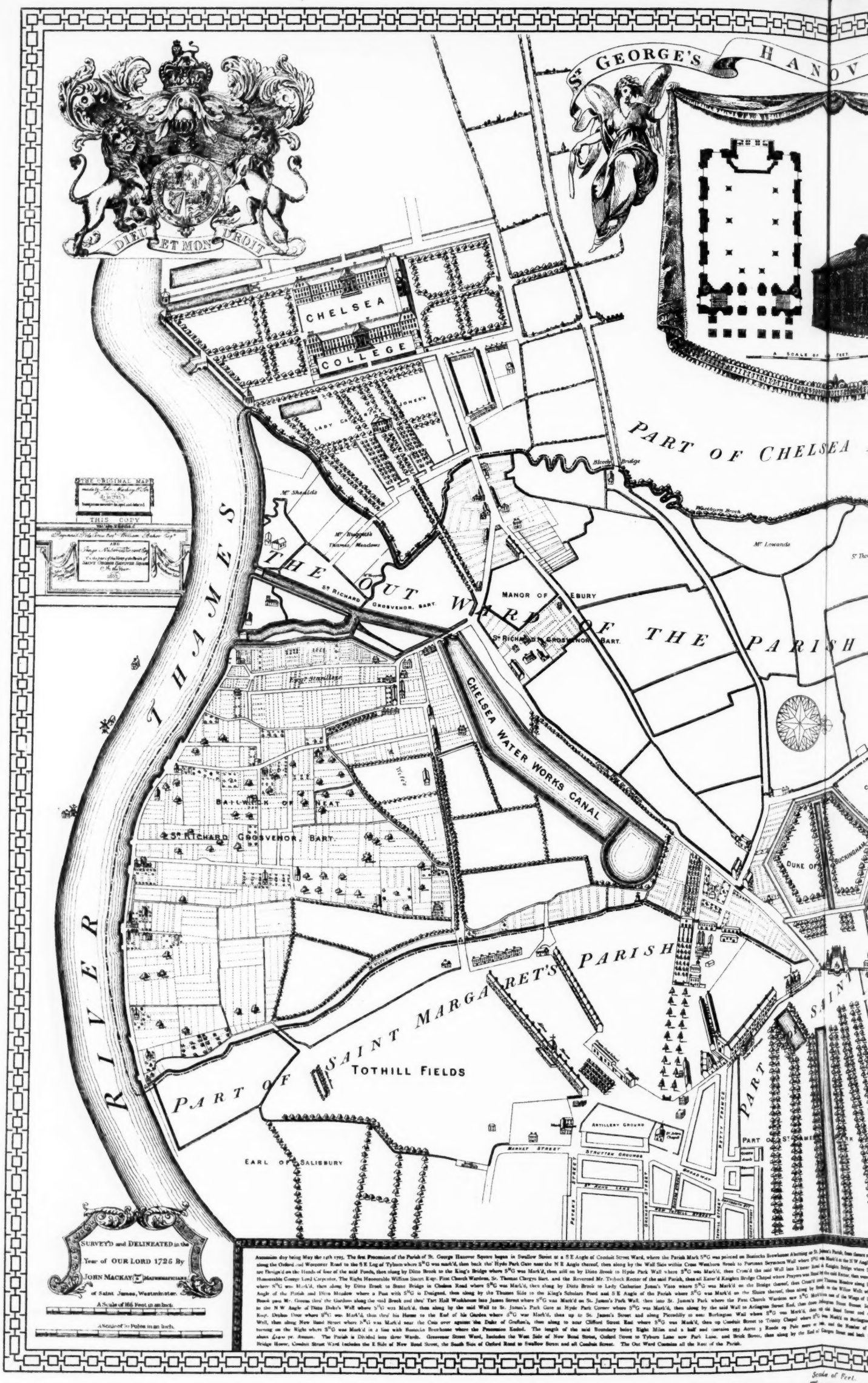
SOME ARCHITECTURAL WORKS OF INIGO JONES.")



JENNY'S WHIM BRIDGE, otherwise EBURY BRIDGE, on the site of the present street of that name: removed *circa* 1825.

THE GUN TAVERN; pulled down in 1857: site now partly occupied by Buckingham Palace Hotel.

INK-PHOTO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



PARISH OF ST. GEORGE, HAN

COPY OF THE ORIGINAL PLAN OF THE PARISH, DATED 172

A List of the Lords Spiritual and Temporal present Inhabitants of the Parish.

Duke of Grafton.	Earl of Litchfield.	Earl of Dunmore.	Lord Guilford.
Duke of St. Albans.	Earl of Grantham.	Earl of Orkney.	Lord Bernard.
Duke of Bolton.	Earl of Albemarle.	Earl of Dalkeith.	Lord Carteret.
Duke of Devonshire.	Earl of Paulet.	Earl of Arran.	Lord Waldegrave.
Duke of Rutland.	Earl of Ferrers.	Earl of Thomond.	Lord Foley.
Duke of Buckingham.	Earl of Oxford.	Earl of Darnely.	Lord Compton.
Duke of Manchester.	Earl of Uxbridge.	Lord Viscount St. John.	Lord Rosslagh.
Duke of Roxburgh.	Earl of Sussex.	Lord Viscount Tyrconnell.	Lord Carpenter.
Duke of Montrose.	Earl of Cadogan.	Lord Viscount Mountjoy.	Lord Malpas.
Marquis of Carmarthen.	Earl of Coningsby.	Lord Viscount Castlemaine.	Lord Arch: Hamilton.
Marquis of Hartington.	Earl of Pomfret.	Lord Viscount Hillsborough.	Lord Fred: Howard.
Earl of Leicester.	Earl of Hertford.	Lord Viscount How.	Lord John Carr.
Earl of Westmoreland	Earl of Stairs.	Lord Hamdon.	Lord Bishop of Durham.
			Lord Bishop of Salisbury.

PHOTO-LITHO. SPRAGUE & Co. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

GEORGE, HANOVER SQUARE.

PARISH, DATED 1725, IN THE POSSESSION OF THE VESTRY.